Haier

Commercial Air Conditioning

SERVICE MANUAL

Models

X-MULTI series

AD092XLERA

AD122XLERA

AD142XLERA

AD182XLERA

● Features

- **High energy efficiency**
- **New designed structure: adjustable drainage pan, to select water drainage from left or right side**
- **With new designed fan scroll, reduce the noise**
- **Connected with the X-MULTI outdoor unit**
- **Wired control type (standard), infrared control type (optional)**
- **Adjustable heating temperature compenstation**
- **Free combination, multiple connection types with different types of indoor unit, total indoor load can be up to 135% than the standard match**
- **Central control and full automation, if connected with a central controller**
- **New friendly refrigerant R410a, zero ODP, environment protection**
- **Advanced technology, DC inverter control function**
- **Group control function**
- **Auto restart function**
- **Room card function**

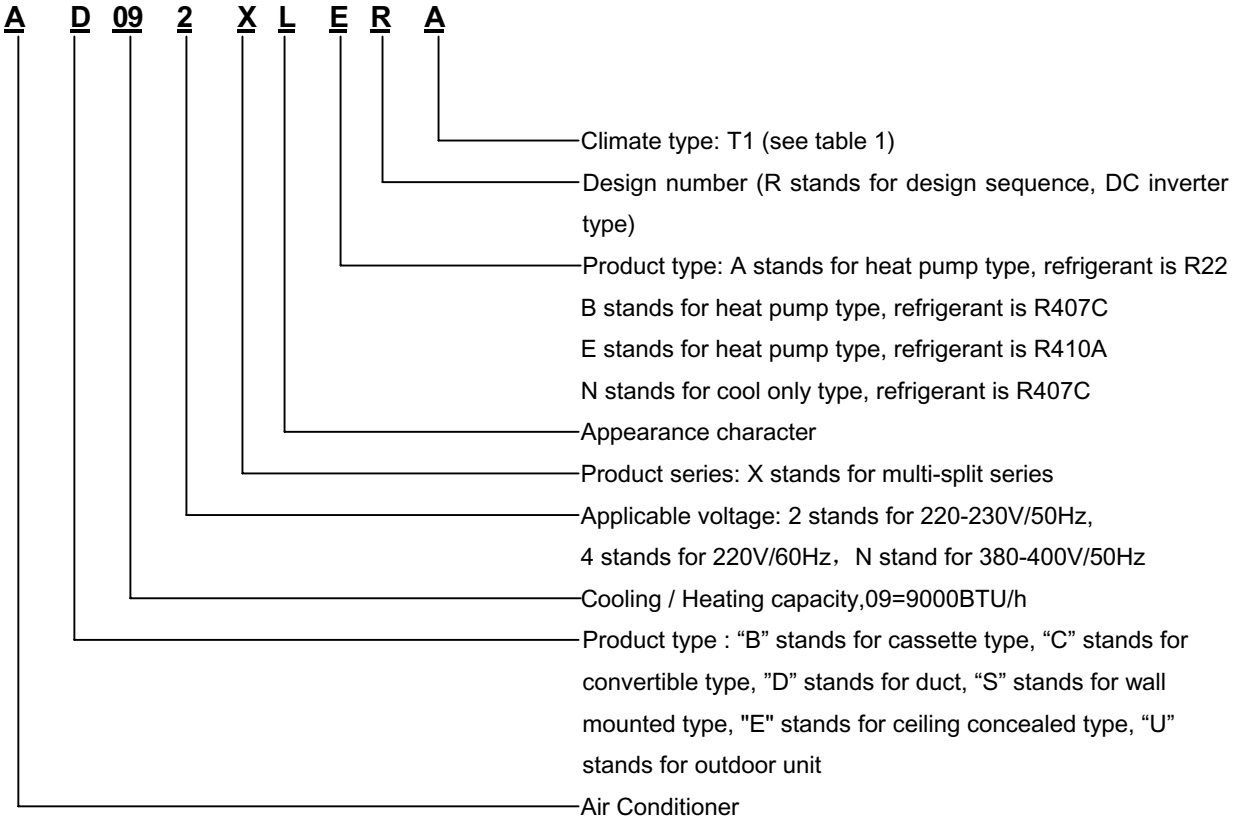
Manual code: SYJS-015-06REV.1 **Edition: 2007-04-14**

CONTENTS

Contents……...2
1. Description of products & features……..3
2. Specification……5
3. Installation instructions……..……7
4. Wired controller functions……..19
5. Electrical control functions……..25
6. Troubleshooting……..……31
7. Electrical data……..34
8. Noise level……..……38
9. Air velocity distribution……..……40

1.Description of products & features

1.1. Products code explanation


A D 09 2 X L E R A
Climate type: T1 (see table 1)
Design number (R stands for design sequence, DC inverter type)
Product type: A stands for heat pump type, refrigerant is R22
B stands for heat pump type, refrigerant is R407C
E stands for heat pump type, refrigerant is R410A
N stands for cool only type, refrigerant is R407C
Appearance character
Product series: X stands for multi-split series
Applicable voltage: 2 stands for 220-230V/50Hz,
4 stands for 220V/60Hz，N stand for 380-400V/50Hz
Cooling / Heating capacity,09=9000BTU/h
Product type : “B” stands for cassette type, “C” stands for convertible type, ”D” stands for duct, “S” stands for wall mounted type, "E" stands for ceiling concealed type, “U” stands for outdoor unit
Air Conditioner

1.2 Brief Introduction for T1、T2、T3 working condition

Type of Air Conditioner	Climate type		
	T1	T2	T3
Cooling Only	18 ℃~43℃	10℃~35℃	21℃~52℃
Heat pump	-7℃~43℃	-7℃~35℃	-7℃~52℃
Electricity Heating	~43℃	~35℃	~52℃

1.3 Operating Range of Air Conditioners

Working temperature range					
			Rated	Maximum	Minimum
Cooling	Indoor	DB℃	27	32	18
		WB℃	19	23	14
	outdoor	DB℃	35	43	10
		WB℃	24	26	6
Heating	Indoor	DB℃	20	27	15
		WB℃	14.5	--	--
	outdoor	DB℃	7	24	-15
		WB℃	6	18	--

1.4 Product features

▶ High efficienct, can match with the universal outdoor unit

The outdoor unit can match with wall mounted type, duct and cassette type indoor unit. One set outdoor can match with multiple indoor units, up to 3 sets. Even when you have already installed the air conditioner, if you want to add or reduce one unit, go ahead freely as long as your operation complies with our design. Greatly convenient for designer and installer.

▶Total indoor load can be up to 135% than the standard match

The total capacity of all indoor units can be 135% more than the mominal cooling capacity, but the total indoor cooling capacity will not be increased.

▶ New designed structure: adjustable drainage pan, to select water drainage from left or right side

The new designed drainage pan can be drawed out and fixed on the opposite direction, which can change the water drainage direction. Greatly convenient for installation and design.

▶ Adopt the much friendlier refrigerant R410a

The air conditioner system adopts the greatly friendly refrigerant R410a, which is protective for the ozone layer and is good to avoid the earth getting warmer. Benefit for the environment.

▶ Adopt the advanced DC inverter technology

The system adopts the advanced DC inverter technology, which can consume less power energy to realize the equal efficiency, saving money for you.

▶ With new designed plastic fan scroll, reduce the noise

The fan scroll adopts the plastic material, which has greatly reduced the noise.

▶ Wired controller YR-E12

The wired controller YR-E12 can control a single unit individually, also it can control the unit in group of 16 indoor units. With plenty of functions: refer to the controller function section.

▶ Auto–restart function (optional)

All indoor units have auto-restart function. When the power supply cut off suddenly, the unit will automatically recover the previous running mode once the power supply is on.

▶ Self-diagnostic function

In the course of operation, if the failure occurs, the failure code will display on the wired controller or on the operation panel. Then according to the failure code chart, you can eliminate the failure soon.

▶ Central control function, if connected with a central controller

That is convenient for building management.

▶ Weekly timing function, if connected with a detector and a weekly timer

▶ Adjustable heating temperature compensation

In heating mode, the temperature compensation can be adjusted by the remote controller. If you do not want the compensation, you can set the compensation as 0 degree.

2. Specification

Item			Model	AD092XLERA		AD122XLERA	
Function			——	Cooling	Heating	Cooling	Heating
Capacity			W	2500	2900	3500	3800
Dehumidifying capacity			10 - ³×m³/h	1.0	/	1.2	/
Power cable			——	3 × (1.0~1.5mm²)			
Communication cable			——	2x(0.75~1.25mm²), must be shielded			
Power source			N, V, Hz	1, 220~230, 50			
Running current			A	0.35	0.35	0.35	0.35
	Fan	Type × Number	——	CROSS × 1		CROSS × 1	
		Speed	r/min	1050/950/850/750		1050/950/850/750	
		Motor output power	W	30		30	
		Air-flows (H/M/L)	m³/h	550/500/450/400		550/500/450/400	
	Heat exchanger	Type / Diameter	mm	7		7	
		Face area	m²	about 0.12		about 0.12	
		Temp. scope	℃	cooling: 6~7 / heating: 43~60			
	Dimension (L×W×H)	External	mm	610/495/225		610/495/225	
		Package	mm	695/536/265		695/536/265	
	Drainage pipe	material, diameter	mm	(o.d./I.d.*)		(o.d./I.d.*)	
	Controller type		——	Wired controller YR-E12			
	Refrigerant control		——	PMV on outdoor unit			
	Fresh air hole dimension		mm	/		/	
	Electricity Heater		——	/		/	
	Noise level	H/M/L	dB(A)	44/42/40/36		44/42/40/36	
	Weight	Net / Shipping	kg / kg	14/16		14/16	
Piping	Refrigerant	Type	——	R410A		R410A	
	Pipe	Liquid	mm	6.35		6.35	
		Gas	mm	9.52		9.52	
	Connecting method		——	Flared		Flared	

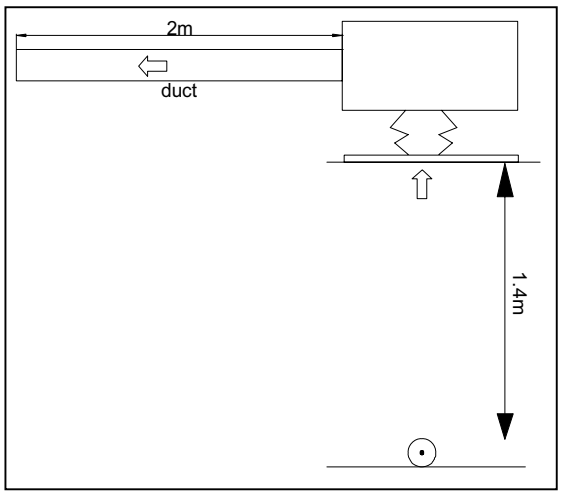
Item			Model	AD142XLERA		AD182XLERA	
Function			——	Cooling	Heating	Cooling	Heating
Capacity			W	4100	4600	5000	5500
Dehumidifying capacity			10 - ³×m³/h	1.6	/	2.0	/
Power cable			——	3 × 0.75mm²			
Communication cable			——	2x(0.75~1.25mm²), must be shielded			
Power source			N, V, Hz	1, 220~230, 50			
Running current			A	0.85	0.85	0.85	0.85
	Fan	Type × Number	——	CROSS × 2		CROSS × 2	
		Speed	r/min	1270/1160/1020/900/		1270/1160/1020/900/	
		Motor output power	W	80		80	
		Air-flows (H/M/L)	m³/h	830/780/700/650		830/780/700/650	
	Heat exchanger	Type / Diameter	mm	7		7	
		Face area	m²	about 0.23		about 0.23	
		Temp. scope	℃	cooling: 6~7 / heating: 43~60			
	Dimension (L×W×H)	External	mm	1090/500/218		1090/500/218	
		Package	mm	1161/536/269		1161/536/269	
	Drainage pipe	material, diameter	mm	(o.d./I.d.*)		(o.d./I.d.*)	
	Controller type		——	Wired YR-E12			
	Refrigerant control		——	PMV on outdoor unit			
	Fresh air hole dimension		mm	/		/	
	Electricity Heater		——	/		/	
	Noise level	H/M/L	dB(A)	49/46/44/40		49/46/44/40	
	Weight	Net / Shipping	kg / kg	25/29		25/29	
Piping	Refrigerant	Type	——	R410A		R410A	
	Pipe	Liquid	mm	6.35		6.35	
		Gas	mm	12.7		12.7	
	Connecting method		——	Flared		Flared	

* o.d.=outer diameter; i.d.=inner diameter

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values in the semi-anechoic chamber, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.
Testing method:

duct unit without auxiliary duct:



Note: ⊙ is the real time analyser position

3. Installation Instructions

Cautions

• Do not obstruct or cover the ventilation grille of the air conditioner. Do not put fingers or any other things into the inlet/outlet and swing louver.

• Do not allow children to play with the air conditioner. In no case should children be allowed to sit on the outdoor unit.

Specifications

The refrigerating circuit is leak-proof.
The machine is adaptive in following situation:

1.Applicable ambient temperature range:

			Rated	Maximum	Minimum
Cooling	Indoor	DB ℃	27	32	18
		WB ℃	19	23	14
	outdoor	DB ℃	35	43	10
		WB ℃	24	26	6
Heating	Indoor	DB ℃	20	27	15
		WB ℃	14.5	--	--
	outdoor	DB ℃	7	24	-15
		WB ℃	6	18	--

2. If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similar qualified person.

3. If the fuse on PC board is broken, please change it with the type of T 3.15A /250VAC.

4. The wiring method should be in line with the local wiring standard.

5. The power cable and connecting cable are self-provided.

The requirement of the connecting cable:

Model	Connecting cable
AD092XLERA AD122XLERA AD142XLERA AD182XLERA	Power cable: H05RN-F 3G 2.5mm^2 Signal wires: H05RN-F 2X1.5mm^2

All the cables shall have got the local authentication certificate.

6. The breaker of the air conditioner should be all-pole switch; and the distance between its two contacts should be no less than 3mm. Such means for disconnection must be incorporation in the fixed wiring.

7. The waste battery shall be disposed properly.

8. The appliance is not intended for use young children or infirm persons without super vision.

9. Young children should be supervised to ensure that they do not play the appliance.

1. Safety precautions

- Please read these "Safety Precautions" first then accurately execute the installation work.
- Though the precautionary points indicated herein are divided under two headings, ⚠ WARNING and ⚠ CAUTION , those points which are related to the strong possibility of an installation done in error resulting in death or serious injury are listed in the ⚠ WARNING section. However, there is also a possibility of serious consequences in relationship to the points listed in the ⚠ CAUTION section as well.
- In either case, important safety related information is indicated, so by all means, properly observe all that is mentioned.

  After completing the installation, along with confirming that no abnormalities were seen from the operation tests, please explain operating methods as well as maintenance methods to the user (customer) of this equipment, based on the owner's manual.

  Moreover, ask the customer to keep this sheet together with the owner's manual.

⚠ WARNING

- This system should be applied to places as office, restaurant, residence and the like. Application to inferior environment such as engineering shop could cause equipment malfunction.
- Please entrust installation to either the company which sold you the equipment or to a professional contractor. Defects from improper installations can be the cause of water leakage, electric shocks and fires.
- Execute the installation accurately, based on following the installation manual. Again, improper installations can result in water leakage, electric shocks and fires.
- When a large air-conditioning system is installed to a small room, it is necessary to have a prior planned countermeasure for the rare case of a refrigerant leakage, to prevent the exceeding of threshold concentration. In regards to preparing this countermeasure, consult with the company from which you perchased the equipment, and make the installation accordingly. In the rare event that a refrigerant leakage and exceeding of threshold concentration does occur, there is the danger of a resultant oxygen deficiency accident.
- For installation, confirm that the installation site can sufficiently support heavy weight. When strength is insufficient, injury can result from a falling of the unit.
- Execute the prescribed installation construction to prepare for earthquakes and the strong winds of typhoons and hurricanes, etc. Improper installations can result in accidents due to a violent falling over of the unit.
- For electrical work, please see that a licensed electrician executes the work while following the safety standards related to electrical equipment, and local regulations as well as the installation instructions, and that only exclusive use circuits are used.

  Insufficient power source circuit capacity and defective installation execution can be the cause of electric shocks and fires.
- Accurately connect wiring using the proper cable, and insure that the external force of the cable is not conducted to the terminal connection part, through properly securing it. Improper connection or securing can result in heat generation or fire.
- Take care that wiring does not rise upward, and accurately install the lid/service panel.

⚠ WARNING

- Its improper installation can also result in heat generation or fire.
- When setting up or moving the location of the air conditioner, do not mix air etc. or anything other than the designated refrigerant within the refrigeration cycle.
- Rupture and injury caused by abnormal high pressure can result from such mixing.
- Always use accessory parts and authorized parts for installation construction. Using parts not authorized by this company can result in water leakage, electric shock, fire and refrigerant leakage.

⚠ CAUTION

- Execute proper grounding. Do not connect the ground wire to a gas pipe, water pipe, lightning rod or a telephone ground wire. Improper placement of ground wires can result in electric shock.
- The installation of an earth leakage breaker is necessary depending on the established location of the unit. Not installing an earth leakage breaker may result in electric shock.
- Do not install the unit where there is a concern about leakage of combustible gas.
- The rare event of leaked gas collecting around the unit could result in an outbreak of fire.
- For the drain pipe, follow the installation manual to insure that it allows proper drainage and thermally insulate it to prevent condensation. Inadequate plumbing can result in water leakage and water damage to interior items.

PRECAUTION

- Execute proper grounding. Do not connect the earth wire to a gas pipe, water pipe, lightening rod, or a telephone ground wire. Improper placement of earth wires can result in electric shock.
- An electric leakage breaker must be installed, otherwise electric shock or other accidents would occur.
- After completion of the installation, the air conditioner shall be electrified to check for electric leakage.

2. Preparation for installation

Installation tools

1	Screw Driver (flat head, wabbler, triangle)	8	Pipe Expander
2	Steel Saw	9	Knives
3	60mm Drill	10	Clippers
4	Inner Hexagon Spanner	11	Leakage Checker or Soap Liquid
5	Shifting Spanner	12	Measuring Tape
6	Spanner	13	Scraper or File
7	Pipe Cutter	14	Refrigeration Oil

3. Accessories for installation

Self-contained accessories

No.	A	B	C	D	E	F
Name of Parts	Non-adhesive Tape	Adhesive tape	Connecting Hose	Heat insulation material	Gypsum powder	Drain hose

4. Choose the installation place

- Install the indoor unit where the weight of the unit can be supported.
- Install the indoor unit where the heat source and steam source are not close and the unit inlet and outlet are not blocked.
- Install the indoor unit where the drainage is easy and the outdoor unit can be easily connected. Install the indoor unit where its cold air and hot air can be easily sent to all the corners of the room.
- Install the indoor unit where the power socket is near and there is sufficient space around the indoor unit.
- Install the indoor unit where there is no T.V set, radio set, and wireless appliance underneath, and the sunlight lamp is over one meter away.
- If the remote controller is installed on the wall, the indoor unit shall be ensured to receive the signal while the sunlight lamp is on.

5. Installation procedure

1. Drill a hole in the wall and insert the connecting pipe and wire through a PVC wall-through tube purchased locally. The wall hole shall be with a outward down slope of at least 1/100. (See Figure 1)
2. Before drilling check that there is no pipe or reinforcing bar just behind the drilling position. Drilling shall avoid at positions with electric wire or pipe.
3. Mount the unit on a strong and horizontal building roof. If the base is not firm, it will cause noise, vibration or pipe broken and refrigerant leakage (see Figure 6).
4. Support the unit firmly.
5. Change the form of the connection pipe, connection wire and drain pipe so that they can go through the wall hole easily.

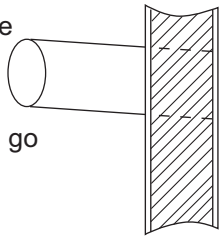
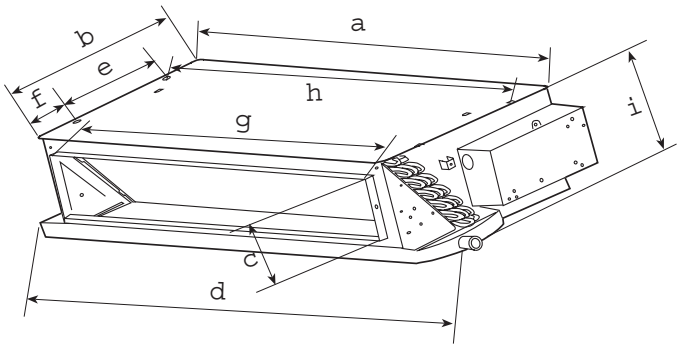


Fig 1



Installation dimension:(mm)

Unit model	a	b	c	d	e	f	g	h	i
AD092XLERA AD122XLERA	538	483.5	131	610	255	105	418	508	220
AD142XLERA AD182XLERA	1002	483.5	131	1105	255	105	880	970	220

NOTE!

1.This series' indoor units are all low static pressure type(max. 20 Pa external static pressure available).
2.An access port must be provided during installation of indoor unit for maintenance.

- When installing the ceiling concealed type indoor unit, a specially designed return air bellows shall be installed, as shown in Figure 3, Figure 4.

Figure 3

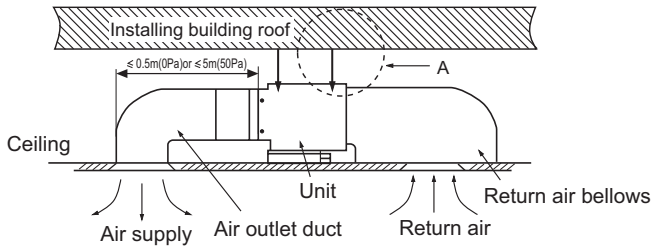
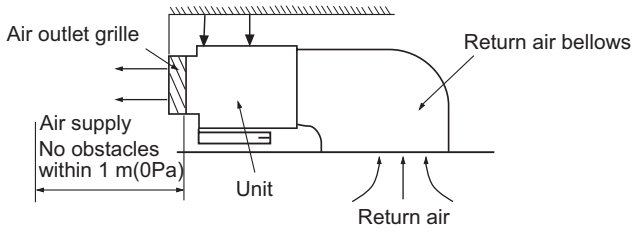
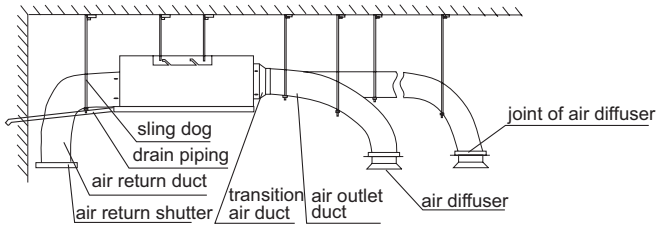


Figure 4



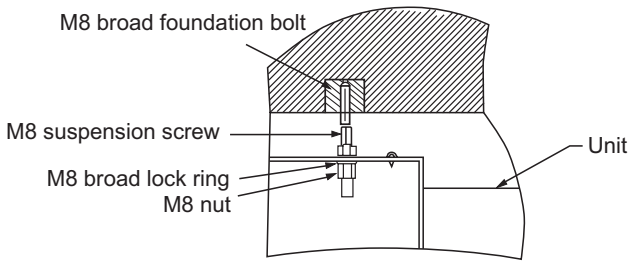
- Each air return and supply duct should fix to the floor precast slab by using an iron stand. Use glue to seal the interface closely. Recommend the distance between the air return duct and the wall is more than 150mm.
- The distance between air duct outlet and air conditioner outlet is according to the length of actually installed air duct and in service behavior of the static pressure terminal: Installation sketch map for long and short air duct is showed below, when connect to short air duct, using low static terminal (terminal color is white), the distance between air duct outlet and air conditioner outlet is no more than 0.5m; when connect to long air duct, using middle static terminal (terminal color is red), the distance between air duct outlet and air conditioner outlet could be within 5m at this point.

Figure 5



- Drain piping of condensed water should keep a downhill grade of 1% or more. Use insulating pipe to cover the drain piping of condensed water to keep warmth.
- As figure shown, suspend and install the unit.

Figure 6



Installation for air duct indoor unit

1. Installation of air discharge duct

- This type of unit uses circular air duct with its caliber of 180mm.
- An additional transitive air duct is necessary for the circular air duct to connect to the air supply inlet. It should be also connected to its respective air diffuser separately. See Fig.1. Adjust the wind speed of each air diffuser outlet to keep in line on the whole, so as to meet a demand of the air conditioner in the room.

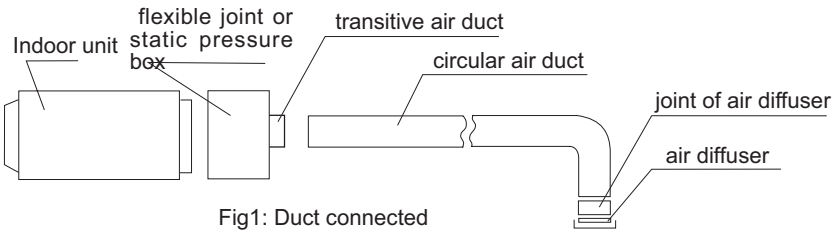


Fig1: Duct connected

2. Installation of air return duct

Use rivets to connect the air return duct to the air return inlet of the indoor unit. The other end connects to the air return shutter. as shown in Fig.2.

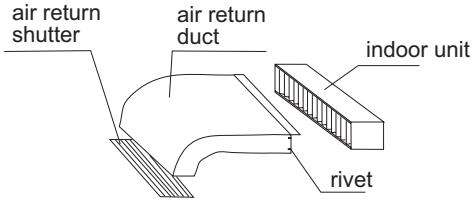


Fig2: Duct return connected

3. Air duct insulation

Insulation layer is needed for air supply and return duct. First, paste a glue nail to the air duct, and then attach the insulation cotton that has a tinfoil layer and use the glue nail cover to fix. Finally, seal the air duct interface with tinfoil adhesive tape closely. as shown in Fig3.

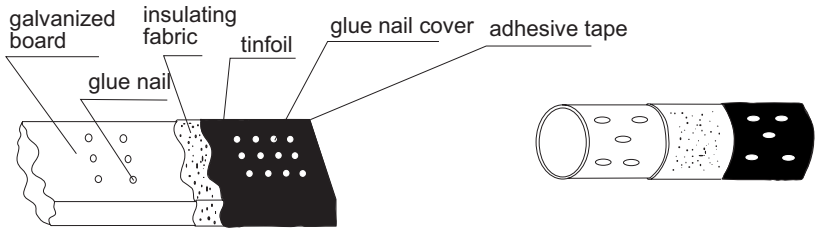


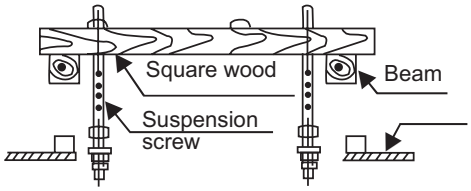
Fig3

Installing the suspension screw

Use M8 or M10 suspension screws (4, prepared in the field) (when the suspension screw height exceeds 0.9 m, M10 size is the only choice). These screws shall be installed as follows with space adapting to air conditioner overall dimensions according to the original building structures.

Wooden structure

A square wood shall be supported by the beams and then set the suspension screws.

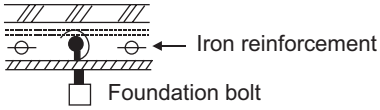


New concrete slab

To set with embedded parts, foundation bolts etc.

Knife embedded part

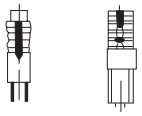
Guide plate embedded part



Pipe suspension foundation bolt

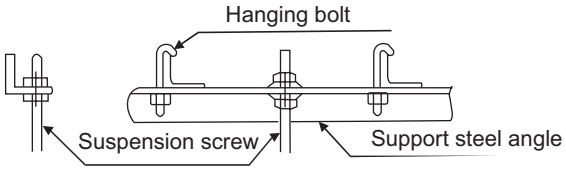
Original concrete slab

Use hole hinge, hole plunger or hole bolt.



Steel reinforcement structure

Use steel angle or new support steel angle directly.



Hanging of the indoor unit

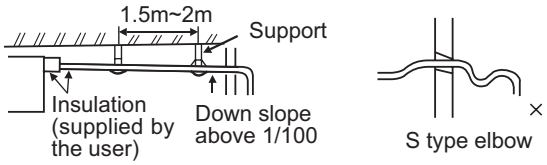
Fasten the nut on the suspension screw and then hang the suspension screw in the Tslot of the suspension part of the unit.
Aided with a level meter, adjust level of the unit within 5 mm.

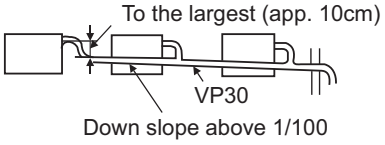
⚠ CAUTION

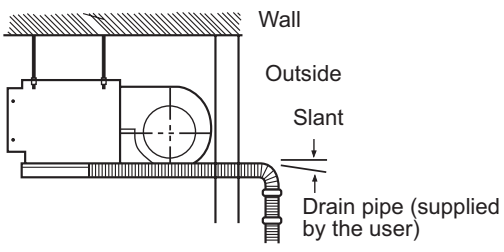
In order to drain water normally, the drain pipe shall be processed as specified in the installation manual and shall be thermal insulated to avoid dew generation. Improper hose connection may cause indoor water leakage.

Requirements

- The indoor drain pipe shall be thermal insulated.
- The connection part between the drain pipe and the indoor unit shall be insulated so as to prevent dew generation.
- The drain pipe shall be slant downwards (greater than 1/100). The middle part shall not be of Stype elbow, otherwise abnormal sound will be produced.
- The horizontal length of the drain pipe shall be less than 20 m. In case of long pipe, supports shall be provided every 1.5 □ 2m to prevent wavy form.
- Central piping shall be laid out according to the following figure.
- Take care not to apply external force onto the drain pipe connection part.







Pipe and insulation material

Pipe	Rigid PVC pipe VP31.5mm (internal diameter)
Insulation	Foamed PE with thickness above 7mm

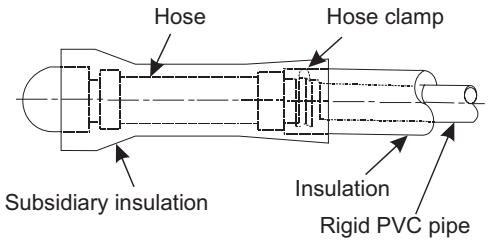
Hose

Drain pipe size: □19.05mm² (3/4") PVC pipe.
The hose is used for adjusting the off-center and angle of the rigid PVC pipe.

- Directly stretch the hose to install without making any deformation.
- The soft end of the hose must be fastened with a hose clamp.
- Please apply the hose on horizontal part

Insulation treatment:

- Wrap the hose and its clamp until to the indoor unit without any clearance with insulating material, as shown in the figure.



Drain confirmation

During trial run, check that there is no leakage at the pipe connection part during water draining even in winter.

Allowable pipe length and drop

These parameters differ according to the outdoor unit. See the instruction manual attached with the outdoor unit for details.

Supplementary refrigerant

The refrigerant supplementation shall be as specified in the installation instructions attached with the outdoor unit. The added refrigerant shall be R22.

The adding procedure shall be aided with a measuring meter for a specified amount of supplemented refrigerant

Requirement

Overfilling or underfilling of refrigerant will cause compressor fault. The amount of the added refrigerant shall be as specified in the instructions.

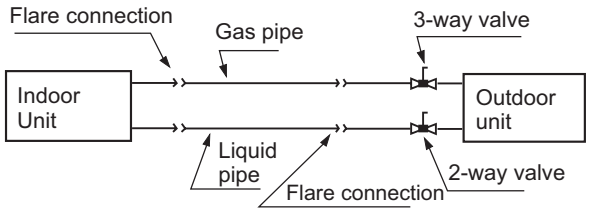
Pipe cutting and expanding

If the pipe is too long or the flare is damaged, it needs to be cut or expanded.

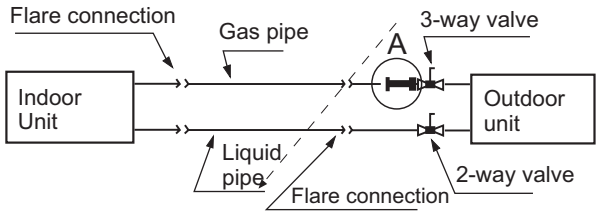
1. Pipe cutting 2. Removing burrs 3.Insertion nut 4. Pipe expansion

Piping Connection

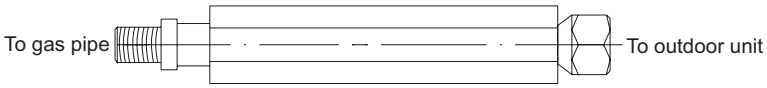
AD092XLERA
AD122XLERA



AD142XLERA
AD182XLERA

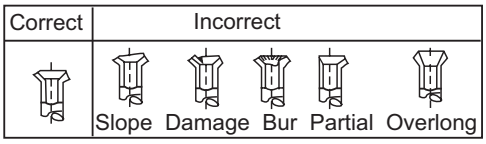


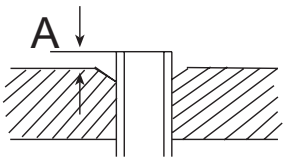
A(adaptor, from ∅9.52 to ∅12.7)



Pipe expansion dimensions as follows:

Pipe diameter □	Size A (mm)
6.35 mm (1/4")	0.8 ~ 1.5
9.52 mm (3/8")	1.0 ~ 1.8
12.7 mm (1/2")	1.2 ~ 2.0

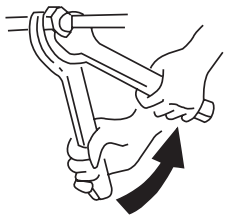




Pipe expander

- The connection of indoor unit pipes must use double spanners.
- The installing torque shall be as given in the following table.

Connecting pipe O.D.(mm)	Installing torque (N-m)	Increased installing torque (N-m)
□6.35	11.8 (1.2kgf-m)	13.7 (1.4 kgf-m)
□9.52	24.5 (2.5kgf-m)	29.4 (3.0 kgf-m)
□12.70	49.0 (5.0 kgf-m)	53.9 (5.5 kgf-m)



Double-spanner operation

1. Indoor unit communication addresses setting

CAUTION! FAIL TO DO THIS, THE UNIT WILL NOT WORK.

This kind of indoor units can only set the address by using the Dip Switches.

(1).Please note that the address must be set as following:

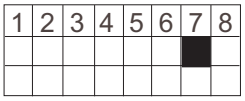
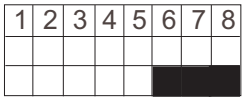
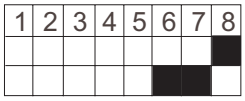
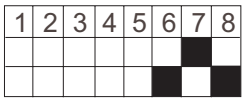
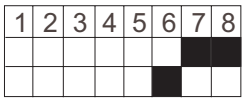
Indoor unit that connect to valve A, the address must be 1;
Indoor unit that connect to valve B, the address must be 2;
Indoor unit that connect to valve C, the address must be 3;
Indoor unit that connect to valve D, the address must be 4;

(2). Address setting procedure when using the DIP switches SW01 and SW03.

A. The DIP switches SW01 and SW03 are on the indoor unit PCB.

B. Change the position of DIP 7 of SW01 from OFF to ON, if fail to do this, the addresses set by SW03 will not work.

C. Use SW03 to set the addresses as following (DO NOT CHANGE OTHER DIP SWITCHES):

SW01	SW03	INDOOR UNIT ADDRESS	OUTDOOR VALVE
		1	A
		2	B
		3	C
		4	D

2.Installation check and trial operation

Check the Layout of the Drain Pipe and Connection Wires, and also the piping and address setting. The drain pipe should be placed underneath, and the connection wires should be placed upside; and the drain pipe especially the section inside the machine and indoors must be wound up with insulating material to preserve heat. The drain pipe shall be sloped and no concave and convex shall occur along the whole pipe. And the cases as the right figure indicates shall not occur.

3.Installation check

- Is power supply voltage required?
- Is water completely drained to outdoors?
- Are power wire and connection wires between indoor and outdoor units correctly connected?
- Is any gas leaked from the pipe connectors?
- Are series numbers of the terminals on the indoor and outdoor units corresponding to each other?
- Is the connection section of the auxiliary pipe insulated? Is the indoor unit fixed firmly?
- Is noise big?

4.Trial operation

The person who has completed this installation shall be requested to conduct a test operation for check:

Is the temperature adjuster working normally?

Does the location for installation conform to requirements?

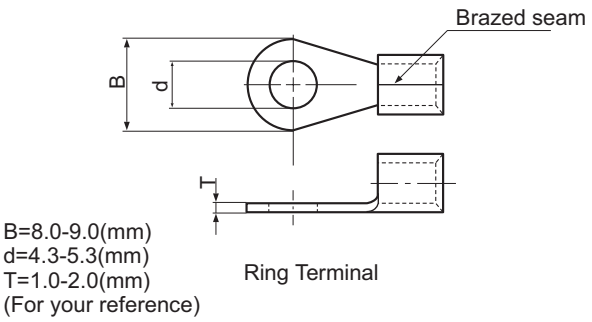
Winding up with Protective Plastic Tape.The connection pipes,drain pipe, and the connection wires shall be wound up with PVC tape.

NOTE!
The connection pipes shall also be wound up with insulating material to preserve the temperature. The airing direction shall be from bottom to top.

Wiring methods:

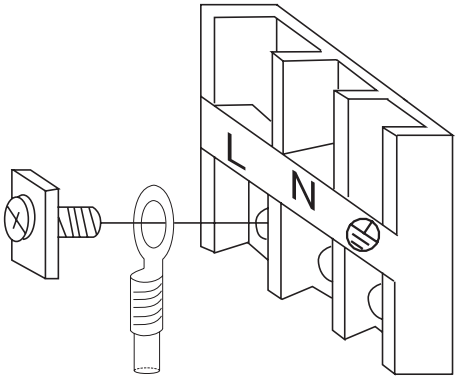
① Wiring method of ring terminal

For connecting line which end is a ring,its wiring method as shown in the right figure: remove wiring screw and pass it through the end ring of connecting line,then connect it to the terminal block and tighten screw.



B=8.0-9.0(mm)
d=4.3-5.3(mm)
T=1.0-2.0(mm)
(For your reference)

Ring Terminal



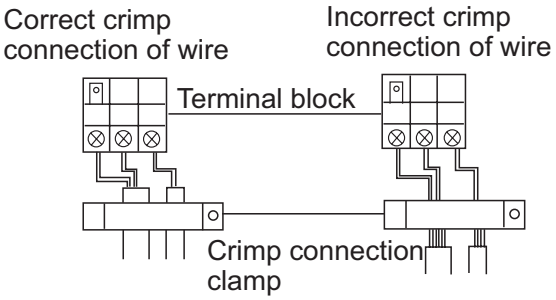
Wiring method of ring terminal

② Wiring method of straight terminal

For connecting line whose end is not a ring, its wiring method as follows: loosen wiring screw and insert the end of connecting line totally into the terminal block,then tighten the screw and pull the connecting line slightly to confirm that it is clamped firmly.

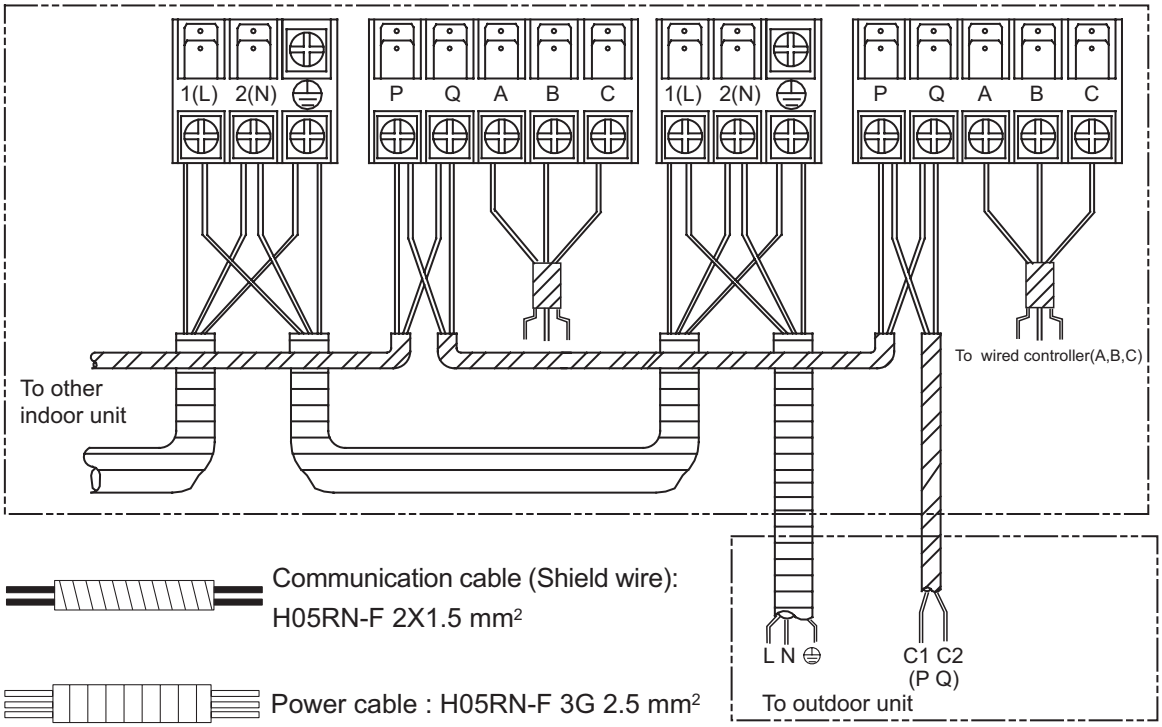
③ Crimp connection method of connecting line

After finishing wiring.connecting line must be fastened by wire clamp,which is pressed on the external sheath of the connecting line, as shown in the figure:



④ Wiring of indoor unit

The distance between the signal wires and the power cabes should be at least 50mm.



Waring:

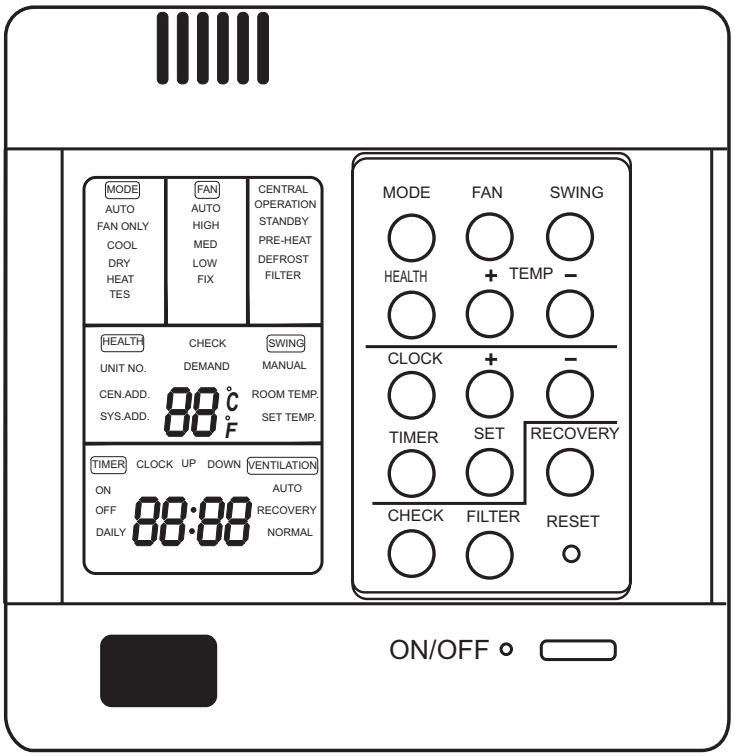
1.Incorrect address setting will cause abnormal to the system.

2.Communication cable must be use sheilded type.

Failure code(* shows the failure is resumable)

TROUBLE SHOOTING (indoor unit)	FAILURE CODE (CHECK THE WIRED REMOTE CONTROLLER)	POSSIBLE REASONS
Faulty temperature sensor **Tai**	01 *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor **Tc1**	02 *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor **Tc2**	03 *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty temperature sensor **Tm**	04 *	Sensor disconnected, or broken, or at wrong position, or short circuit
Faulty EEPROM on indoor unit PCB	05	Faulty indoor unit PCB
Abnormal communication between indoor and outdoor unit	06 *	Wrong connection, or the wires be disconnected, or wrong address setting of indoor units, or faulty power supply or faulty PCB
Abnormal communication between wired controller and indoor unit PCB	07 *	Wrong connection, or use the wired controller be disconnected, faulty PCB
Drainage system abnormal	08 *	The short-connector disconnected, or at wrong position, or the float switch broken down or the float switch disconnected,or at wrong position
Indoor unit address repeated	09	Wrong setting of indoor unit address
Abnormal communication between chip TMP/807 and chip TMP/846	0E	Faulty indoor unit PCB

4. Wired controller functions



Buttons function：

MODE：used for select indoor operation mode.

FAN：used for select indoor air flow.

SWING：used for setting indoor swing mode.

HEALTH：used for setting indoor health function.

TEMP + -：used for changing set temperature.

CLOCK：used to adjust time.

+、-：stands for time plus/minus, used to adjust time.

TIMER：used to set timer mode.

RECOVERY：used to switch over air-exchanging mode.

CHECK：auto-diagnostic button.

FILTER：filter-cleaned button.

RESET：reset correct mode button.

Display description：

[MODE] [AUTO]：auto operation mode

[MODE] [FAN ONLY]：air-throwing mode

[MODE] [COOL]：Cooling operation mode

[MODE] [DRY]：Dehumidification mode

[MODE] [HEAT]：Heating operation mode

[MODE] [HEAT] [TES]：In heating mode, auxiliary electric heater is running. Only when the unit with auxiliary electric heater is in auxiliary electric heating mode, it will display.

[FAN] [AUTO]：auto fan running

[FAN] [HIGH]：high fan speed
[FAN] [MED]： medium fan speed
[FAN] [LOW]： low fan speed
[FAN] [FIX]： fixed fan speed, it will display only when fixed fan speed is requested to main indoor unit.
[CENTRAL]： central control mode
[OPERATION] ： running mode
[STAND BY] ： waiting mode
[PRE-HEAT] ： pre-heating mode
[DEFROST]： defrosting mode
[FILTER] ： request of filter to be cleaned
[HEALTH]：health function
[UNIT NO.]
[CEN.ADD]：central control address, the address number will display on “88”
[SYS.ADD.]：system address, the address number will display on “88”
[CHECK]：auto-diagnostic, trouble shooting
[DEMAND]：compulsory operation function, when it works, [CENTRAL] will flash
[SWING]：swing mode
[ROOM TEMP.]：indoor ambient temperature
[SET TEMP.]：set admired temperature
[TIMER][ON] ：timer function is on, it will switch over in the sequence below:
[ON][OFF] → [ON][OFF][DAILY] →[ ]
[TIMER][OFF] ：timer function is off
[TIMER][ON][OFF] ：timer function ON-OFF
[TIMER][ON][OFF][DAILY]：timer ON-OFF will switch over in turn daily
[CLOCK]：clock display, the displaying time is the current time of the clock.
[UP]、[DOWN]：indicator of filter elevating
[VENTILATION][AUTO]：auto ventilation mode
[VENTILATION][RECOVERY]：fully heat exchanging ventilation mode
[VENTILATION][NORMAL]：normal ventilation mode

FAN ONLY OPERATION：

1）Start up operation: press the button of ON/OFF, the system will start up, and will display [MODE][AUTO]；[FAN][AUTO]；[ROOM TEMP.]+ “24℃”；[CLOCK]+”12：00”.

2） Select MODE: press the MODE button, then you will see in the display section [MODE] switch over in below sequence:[FAN ONLY]→[COOL]→[DRY]→[HEAT]→[AUTO]→[FAN ONLY]. Select [FAN ONLY].

3）Select fan speed: press FAN button, then you see in the display section [FAN] switch over in below sequence: [HIGH]→[MED]→[LOW]→[HIGH]. Select proper fan speed.

4）Power off: press ON/OFF button, indoor unit will be powered off, there are only time and the ambient temperature in the screen.

AUTO operation, COOLING, HEATING and DEHUMIDIFICATION operation

1) Start up operation: press the button of ON/OFF, the system will start up, and will display [MODE][AUTO]；[FAN][AUTO]；[ROOM TEMP.]+ “24℃”；[CLOCK]+”12：00”.
2) Select MODE: press the MODE button, then you will see in the display section [MODE] switch over in below sequence:[FAN ONLY]→[COOL]→[DRY]→[HEAT]→[AUTO]→[FAN ONLY]. Select [FAN ONLY].
3) Change set temperature: press TEMP + or – every time, [SET] will display, and set temperature will increase/reduce 1℃（F）.
4) Select fan speed: press FAN button, then you see in the display section [FAN] switch over in below sequence: [AUTO]→[HIGH]→[MED]→[LOW]→[AUTO]. Select proper fan speed.
5) Select [SWING]: press [SWING] button, swing function is valid. Press again, swing function is invalid.
6) Set [HEALTH]: used to set the indoor health function. Press it once, [HEALTH] will display in the display section, then indoor health function is valid. Press it again, [HEALTH] will disappear, then the health function is invalid.
This function is valid only for the unit with health function.
7) Power off: press ON/OFF button, indoor unit is powered off. There are only time and the ambient temperature in the screen.

Set TIMER operation:

Adjust clock: when powered on, for the first time to set timer function, the clock will be adjusted.
Press “CLOCK” button, and set the current clock. Now, “CLOCK” will flash at the frequency of 2Hz. Press the clock +/- button; the current clock can be adjusted. Until the proper time comes, press [SET].

TIMER ON operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [ON], then [TIMER] [ON] flashes, press the clock +/- button to adjust the time of TIMER ON, press [SET] button.

TIMER OFF operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [OFF], then [TIMER] [OFF] flashes, press the clock +/- button to adjust the time of TIMER OFF, press [SET] button.

TIMER ON-OFF operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [ON] [OFF]. Firstly, [TIMER][ON] flashes, press the clock +/- button to adjust the time of

TIMER ON, press [TIMER]. [TIMER][ON] will be constant on. Then [TIMER] [OFF] flashes, press the clock +/- button to adjust the time of TIMER OFF, press [SET]. The time sequence of timer on and timer off will determine the mode is [TIMER] [ON] →[OFF] or [TIMER] [OFF] →[ON]. If you want the current time, press [CLOCK] once, current time will display; press again, [CLOCK] will flash, and press [+][-] to adjust the time.
Note: 1. If the two times are same, the timer state which is set later will flash, in this case, timer can not be set.
2. When entering TIMER setting state, if you do not input any button in continuous 10 seconds, the unit will quit from the TIMER mode.

Cancel TIMER operation:
In the timer operation state, press [TIMER] button, the unit will quit from the current timer operation state, and the set data will be memorized, then enter the next timer mode.

[FILTER] function
When the wired controller receives the filter-cleaned signal from indoor unit, [FILTER] will display. After finishing clean, press **[FILTER]**, the sign [FILTER] disappears, and the controller will send the filter reset signal to indoor unit.
When the sign [FILTER] not display, it is invalid to press **[FILTER]** in short time.

FILTER ELEVATING function: (only for the unit with elevating function)
When the filter needs to be cleaned, the panel can be lowered to the admired height by the [FILTER][UP][DOWN] function. Method is below: In power off state, press [HEALTH] for 10 seconds to enter filter elevating set state. In this state, the sign [FILTER] will flash and [UP] [DOWN] will display simultaneously, Press TEMP [+], in timer section [UP] will display, while press TEMP [-], in timer section [DOWN] will display. When it arrives the appropriate position, press [UP], [UP][DOWN] will display simultaneously, filter will stop going down. Press [UP] again, filter will go up. Press [FILTER] button to quit the mode.

DEMAND operation function:
By this function, all the indoor units can be made in nominal mode. Set the operation mode in cooling and then shut off the unit. In the stop state, press [ON/OFF] button for 5 seconds to enter cooling trial operation state. If it is in heating mode before shut off the unit, then press [ON/OFF] button for 5 minutes, it will enter heating trial operation state.

In cooling, there will be “LL” in the position where the set temperature displays. In heating, there will be “HH” in the position where the set temperature displays. The wired controller will send the [DEMAND] signal to indoor unit. In the [DEMAND] operation, “COOL” or “HEAT” will display at 1Hz frequency. Indoor fan motor will be fixed at “AUTO” mode. The indoor units in the same group will quit the [DEMAND] in turn.

At this time, only the buttons of [ON/OFF] and temperature [+] [-] are valid. Press [ON/OFF] to quit [DEMAND] mode.

CENTRAL control function

When the central controller selects [CENTRAL] mode, the buttons in the wired controller except for [CHECK] will be invalid.

VENTILATION mode (only for the unit with fresh air function or heat recovery function)

Press [RECOVERY] button, then the unit will switch over the ventilation mode:

[ ] → [VENTILATION][AUTO] → [VENTILATION][RECOVERY] → [VENTALATION][NORMAL] →[ ], please select appropriate ventilation mode.

Query indoor malfunction history:

In the state of power on or power off, press [CHECK] button, enter the malfunction-querying mode of all indoor units in the group. Then [CHECK] and [UNIT NO.] will display, and the actual indoor numbers will be displayed in some sequence (unit number is in decimals). At the same time, in the time region, there will be the current malfunction and the latest time malfunction, the displaying format is [XX：YY], in which XX stands for the current malfunction, if normal, it will display "——"; YY stands for the latest time malfunction. The failure code of every unit will display for 3 seconds. After the failure codes of all indoor units in the whole group are displayed, the mode will quit automatically.

Clear abnormal state and malfunction history:

In normal state, press [CHECK] button for 5 seconds to clear abnormal states, at the same time, wired controller will send the data of "clear abnormal state", but the malfunction history still retains.

In normal state, press [CHECK] button for 15 seconds, except for malfunction states, the malfunction history in wired controller will be cleared.

Query indoor performance state:

In normal state, press both buttons of [CHECK] and [FILTER] for 5 seconds, in the set temperature region in the screen, [XX] will display, XX is indoor number, which can be selected by pressing [TEMP] [+] [-]. In the timer region in the screen, [YZZZ] will display, in which Y stands for data type, ZZZ stands for the corresponding data. which can be selected by pressing [CLOCK] [+] [-].

Y	ZZZ	Type
A	Indoor capacity (W)	Nominal cooling capacity/10, decimal
B	Request of indoor capacity（Hz）	Actual value, decimal
C	Temperature of indoor ambient temp. sensor TA	Actual value, decimal
d	Temperature of indoor gas pipe sensor TC1	Actual value, decimal
E	Temperature of indoor liquid pipe sensor TC2	Actual value, decimal
F	Open degree of indoor PMV	Actual value, decimal

g	Preset	———
H	Outdoor total capacity	Actual value, decimal

In check mode, press [CHECK] to quit the check mode, and go into normal running mode.

How to change the function switches?

No.	Type	State of switch	Function description
J01	Changeover of Wired controller and central controller	Connected	Central controller
		Cut off	Wired controller
J02	Changeover of type of wired controller	Connected	Set as simple controller
		Cut off	Set as standard controller
J06	Selection of room temp. sensor	Connected	Use the sensor in the wired controller
		Cut off	Use the sensor in the indoor unit
J07	Auto restart after power failure	Connected	Common control
		Cut off	Auto restart after power failure
J03	Display of room temperature	Connected	Yes
		Cut off	No
SW01 ①	Changeover of master or slave controller	ON	Set as slave controller
		OFF	Set as master controller
SW01 ②	℃ or ℉	ON	℉
		OFF	℃
D1	Shorten time function	Connected	Indoor unit in shorted time function
		Cut off	Common control
D2	Compulsorily defrost	Connected	Send compulsorily defrost signal to indoor unit
		Cut off	Common control

Note: 1. The switches in grey can be operated after opening the cover of wired controller.
2. Switches or jumper wire must be adjusted when the wired controller is powered off. If the wired controller is powered on, the above operations will be invalid.
3. Shorten time function
In normal operation, D1 is in short circuit, it will enter shorten time mode, and the time will be shortened in the proportion of 60:1. In shorten time mode, LED will flash at the frequency of 0.5 second. Cut off D1, it will quit the shorten time mode and return to the normal operation mode.
4. Compulsorily defrost
In heating mode 30℃ and in High fan speed, D2 is in short circuit, it will enter compulsorily defrost mode; cut off D2, it will quit. It is always be used when in testing to see if the defrost function is good.
5. Lock function
There is no lock function only in the wired controller. But when it is connected with a central controller, if the central controller is set to “central”, the buttons in the wired controller will be invalid, or the buttons will be valid.

5. Electrical Control Functions

1. Dip switch functions:

AB*XCERA, AC*XCERA, AD*XLERA:

SW01								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
0	0	0	0	--	--	--	--	Address 1 in wired control group
0	0	0	1	--	--	--	--	Address 2 in wired control group
----								----
1	1	1	1	--	--	--	--	Address 16 in wired control group
--	--	--	--	--	--	--	0	Room card function valid
--	--	--	--	--	--	--	1	Room card function unavailable
--	--	--	--	--	--	0	--	Indoor address set by remote controller
--	--	--	--	--	--	1	--	Indoor address set by dip switch
--	--	--	--	--	0	--	--	AC 3-speed fan motor
--	--	--	--	--	1	--	--	Stepless speed adjusting motor(pre-set)
--	--	--	--	0	--	--	--	Pre-set
--	--	--	--	1	--	--	--	Pre-set

SW02								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
——	0	0	0	0	0	0	0	Central control address =1
——	0	0	0	0	0	0	1	Central control address =2
----								----
——	1	1	1	1	1	1	1	Central control address =128
0								Forbidden to set central address by dip switch
1								Set central address by dip switch

SW03								description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
0	1	0	--	--	--	--	--	AB092XCERA/AD092XLERA capacity selection
0	1	1	--	--	--	--	--	AB122XCERA/AD122XLERA capacity selection
1	0	0	--	--	--	--	--	AB142XCERA/AD142XLERA/AC142XCERA capacity selection
1	1	0	--	--	--	--	--	AB182XCERA/AD182XLERA/AC182XCERA capacity selection
--	--	--	0	--	--	--	--	Remote control model
--	--	--	1	--	--	--	--	Wired control model
--	--	--	--	0	--	--	--	Wired control, cooling only type
--	--	--	--	1	--	--	--	Wired control, heat pump
--	--	--	--	--	0	0	0	Indoor communication address 1
--	--	--	--	--	0	0	1	Indoor communication address 2

--	--	--	--	--	0	1	0	Indoor communication address 3
--	--	--	--	--	0	1	1	Indoor communication address 4
--	--	--	--	--	1	0	0	Indoor communication address 5
--	--	--	--	--	1	0	1	Indoor communication address 6
--	--	--	--	--	1	1	0	Indoor communication address 7
--	--	--	--	--	1	1	1	Indoor communication address 8

Note: "1" :dip switch at ON, "0": dip switch at OFF.

2. Sign definition:

Indoor				outdoor					
Tai	Tc1	Tc2	Tm	Tao	Toci	Tc	Te	Ts	Td
Ambient temp.	Outlet pipe temp.	Inlet pipe temp.	mid coil temp.	Ambient temp.	Thick pipe of heat exchanger	mid condenser temp.	Defrost temp.	Compressor suction temp.	Compressor discharging temp.
Tcomp1,2			Tset						
Temp. compensation			Set temp.						

3. Dry operation

Tai＜16℃, indoor unit stops running and sends stop-unit signal to outdoor.

Tai≤Tset, indoor motor runs at low speed and sends stop-unit signal to outdoor.

4. Fan operation

Indoor fan motor will run as the fan speed set on the remote controller or the wired controller and indoor unit will send the stop-unit signal to outdoor.

5. Auto operation

5.1 If the unit enters Auto mode for the first time, the system will adjust the operation mode according to the room temp. and the set temp.

When Tai≥Tset, entering auto cooling mode;

When Tai＜Tset, entering auto heating mode.

5.2 Auto cooling mode is as the same as the cooling mode. After the thermostat is OFF for 15 minutes, if Tai+ 1+Tcomp2＜Tset, the unit will enter auto heating mode, or the unit will still stay at auto cooling mode and stop when it reaches the set temperature; while the indoor motor will be at low speed.

5.3 Auto heating mode is as the same as the heating mode. After the thermostat is OFF for 15 minutes, if Tai≥Tset+1 +Tcomp1, the unit will enter auto cooling mode, or the unit will still stay at auto heating mode;

5.4 In this mode, the Sleep function is available, run as cooling sleep in cooling mode and as heating sleep in heating mode. Once sleep mode is set, the mode will not change after the unit stops for 15 minutes when it arrives Tset.

5.5 Mode conversion will be confirmed after compressor has stopped for 10 minutes.

6. Abnormal operation

6.1 When outdoor modes from the request of indoor unit conflict, the one entering firstly will take priority.

6.2 After indoor receives the ON command from wired controller, it will firstly confirm the outdoor current operation mode. If they are the same modes, indoor unit will run as the request of remote controller. If they are different modes, the system will forbid to operate, and indoor will keep the OFF mode and send the “standby” signal to wired controller until outdoor stops or outdoor mode the requested mode of wired controller are the same, the unit will run as the requested mode of wired controller.

6.3 After indoor receives the ON command from remote controller, it will firstly confirm the outdoor current operation mode. If they are the same mode, indoor unit will run as the request of remote controller. If they are different modes, the system will forbid to operate, and indoor will keep the OFF mode. After setting on remote controller, if the buzzer sounds two times, that shows abnormal operation. Indoor will run until the outdoor mode and the requested mode of remote controller are the same.

6.4 In AUTO mode, when the indoor unit occurs abnormal operation, the indoor unit will keep OFF state, and the buzzer will not sound until the outdoor mode and the requested mode of indoor unit are the same.

6.5 COOL (included AUTO COOL), DRY, FAN are not abnormal mode.

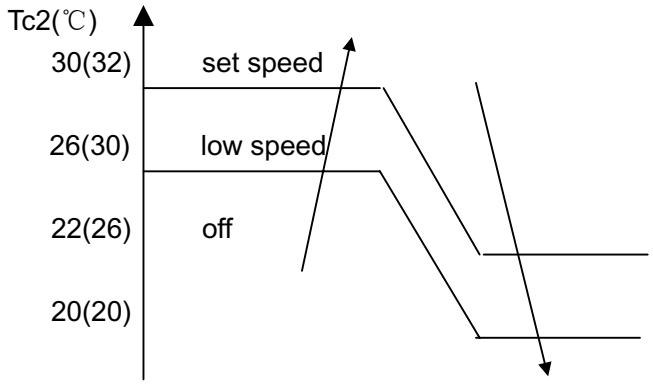
6.6 HEAT and FAN are not abnormal mode.

7. Control for discontinuous operation

After the unit starts up in cooling/heating mode, in 5 minutes, the compressor run/stop will not be controlled by the room temp., but after changing the set temp., if compressor stop condition can be met, the system will stop compressor immediately.

8. Anti-cold air control

In heating mode, after compressor startup, the system will control indoor fan motor according to indoor coil temperature. Detailed operation is as below:



Note:

1) The data in the parentheses is the control point when Tao>10℃;

2) Indoor unit will send “pre-heat” signal to wired controller in anti-cold air period.

9. Fan motor control in defrosting

9.1 On receiving outdoor defrosting signal, indoor unit will stop after blowing remaining heat at slow speed for 20 seconds.

9.2 In defrosting period, indoor fan motor stops running.

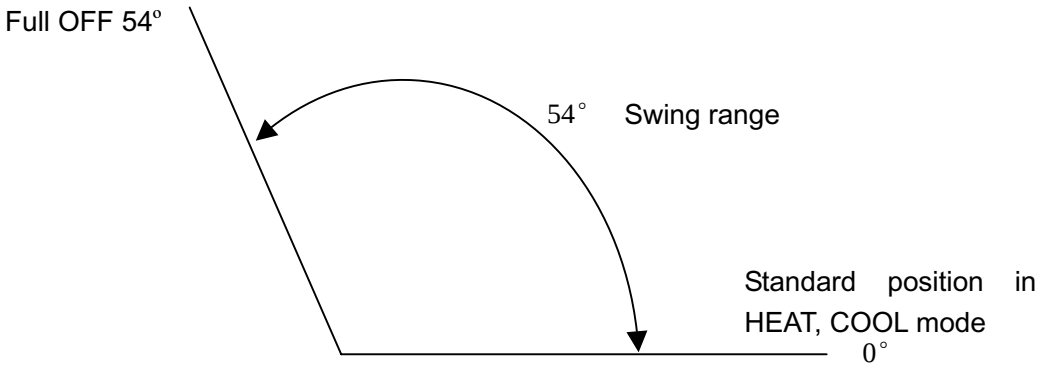
9.3 Defrosting is over, and indoor motor will run as anti-cold air state.

10. Blowing remaining heat operation

When the unit shuts off in heating mode or the thermostat is OFF, indoor motor will stop running after running at low speed for 30 seconds.

11. Swing motor control

Indoor unit will control the swing motor according to the swing signal from the wired controller.



12. Water pump control

12.1 Water pump will be electrified when indoor unit enters non-heating mode until indoor unit stops. 5 minutes later after indoor unit stops, water pump will stop.

12.2 When indoor unit is in heating mode, water pump will not operate.

12.3 In OFF state and in any mode, once float switch signal is measured, indoor unit will send OFF signal to outdoor and send the failure code of drainage system to the wired controller, then the water pump will work until the float switch signal is cancelled. After water pump is forced to run for 5 minutes, indoor unit will be back to normal state.

13. Compulsory defrosting operation

13.1 After indoor receives the compulsory defrosting signal, it will send continously the signal to outdoor for 10 times, in this period, indoor unit will work normally and it will enter defrosting operation until it receives the enter-defrost signal from outdoor unit.

13.2 Wired control type: In heating mode, make a jumper for D2 to enter compulsory defrosting.

13.3 Remote control type: In heating mode, high speed, 30℃, press SLEEP button 6 times, and the buzzer will sound 3 times, then enter the manual defrosting.

14. Trial operation

14.1 Enter condition

A. Wired control type: In OFF state of COOL or HEAT mode, press ON/OFF button for over 5 seconds to enter the cooling or heating trial operation;
B. Remote control type: In OFF state, keep pressing ON/OFF button until 5 seconds later, the buzzer sounds twice, then enter the cooling or heating trial operation;

14.2 Response in trial operation

A. Cooling trial operation: indoor sends S-CODE=SD to outdoor, indoor: at high speed, set temp: 16℃;
B. Heating trial operation: indoor sends S-CODE=SF to outdoor, indoor: at high speed, set temp: 30℃;
C. In this period, anti-freezed and overheat functions are invalid.

14.3 Quit condition

A. Receiving the signal of cancelling trial operation from wired controller or remote controller;
B. After trial operation has run for 20 minutes, it will quit trial operation automatically and enter the normal mode with the set temp.: 24℃.

15. Timer operation

15.1 Wired control type: wired controller will control the unit ON/OFF;

15.2 Remote control type: indoor unit will confirm the unit ON or OFF according to the current clock and the timer clock set by remote controller. When setting timer function, the timer LED will be ON.

16. SLEEP function

16.1 Wired control type unit is without sleep function;

16.2 Remote control type unit consists of cooling sleep and heating sleep, after the sleep is set, the unit

will change mode; the sleep will begin to count.

A. In cooling/dry mode, after running for 1 hour, the set temp. will increase 1℃, another 1 hour later, the set temp. will increase 1℃ again, then 6 hours (or set time-2) later , it will stop.
B. In heating mode, after running for 1 hour, the set temp. will reduce 2℃, another 1 hour later, the set temp. will reduce 2℃ again, then 3 hours later, the set temp. will increase 1℃, and another 3 hours(or set time-5), it will stop.
C. When setting sleep function, indoor motor is forced at low speed.

17. Healthy negative ion function

When receiving the healthy signal from the wired controller or remote controller, if fan motor is running, the negative ion will work;

If the fan motor stops, the negative ion generator will stop.

18. Auto-restart function

18.1 Wired control type: jumper J07 at high level, auto-restart is available, if at low level, auto-restart is cancelled; when out of factory, the unit is with auto-restart function.

18.2 Remote control type: In 5 seconds, press SLEEP button(press SWING if without SLEEP button) 10 times continuously, the buzzer will sound 4 times and enter auto-restart function. In 5 seconds, press SLEEP 10 times continuously, the buzzer will sound twice and quit auto-restart function.

18.3 Memory information: ON/OFF state, mode, fan speed, set temp., health, swing position;

18.4 If the memory includes timer or sleep function, when being electrified again, timer and sleep will be cancelled;

18.5 If the memory includes auto mode, when the jumper shows cooling only type, auto mode will change to cooling mode.

19. Room card function

The unit adopts room card function(220VAC input), which only make ON/OFF control. When it is connected, the unit is ON; when it is disconnected, the unit is OFF, and the other parameters will be as default or the data in memory.

19.1 When room card function is available

The central control, remote control/wired control and the room card are “AND” logical relationship. On the condition that the room card is connected, the unit can be controlled by remote controller or wired controller; indoor unit will run at the set state by the central controller, remote controller or wired controller; otherwise, if room card is not connected, the unit can not be controlled.

19.2 When room card function is not available

The unit will be controlled by the remote controller, the wired controller or the central controller.

20. Setting indoor unit number

A. Wired control unit

Wired controller can not set the unit number.

Please set the unit number with the dip switch on the PCB.

The detailed information refers to the former information.

B. Remote control type:

1) Enter method

In OFF state, press emergency switch until 15 seconds later, the buzzer sounds 4 times, indoor will enter the indoor unit number setting state.

2) Setting method

Press ON/OFF button (from OFF mode to ON mode), the times of SLEEP button to be pressed is the set unit number, then press ON/OFF button to quit unit number setting state, at this time, indoor unit is at OFF state, the display panel will display this unit number. For example, press SLEEP button once, it is No. 1 unit; press twice, it is No. 2 unit, and so on.

3) Quit method

In OFF state, press emergency switch until 15 seconds later, the buzzer sounds 5 times, the display panel will display this unit number and you can check if there are repeated numbers.

21. Setting method of temperature compensation Tcomp

A. Wired control type unit: this function is not available

B. Remote control type unit:

In cooling or heating mode, there is always with the temp. compensation.

In heating mode: In 24℃ heating mode, press SLEEP(or SWING) button 7 times continuously within 5 seconds, indoor buzzer sounds twice, that shows temp. compensation works. Switch on the unit in heating mode by the remote controller, press TEMP button to set the set temp., so temperature compensation=the current set temp. - 24℃. For example, if the set temp. is 24℃, the temp. compensation is 0℃; if the set temp. is 25℃, the temp. compensation is 1℃. The max. compensation temp. is 6℃ (the set temp. is 30℃). If you want to cancel it, set the temp. as 24℃.

In cooling mode: In 24℃ cooling mode, press SLEEP(or SWING) button 7 times continuously within 5 seconds, indoor buzzer sounds twice, that shows temp. compensation works. Switch on the unit in heating mode by the remote controller, press TEMP button to set the set temp., so temperature compensation=24℃-the current set temp. . For example, if the set temp. is 24℃, the temp. compensation is 0℃; if the set temp. is 23℃, the temp. compensation is -1℃. The max. compensation temp. is -8℃ (the set temp. is 16℃). If you want to cancel it, set the temp. as 24℃.

So the temp. compensation range is +8℃~-6℃.

22. Anti-freezed protection

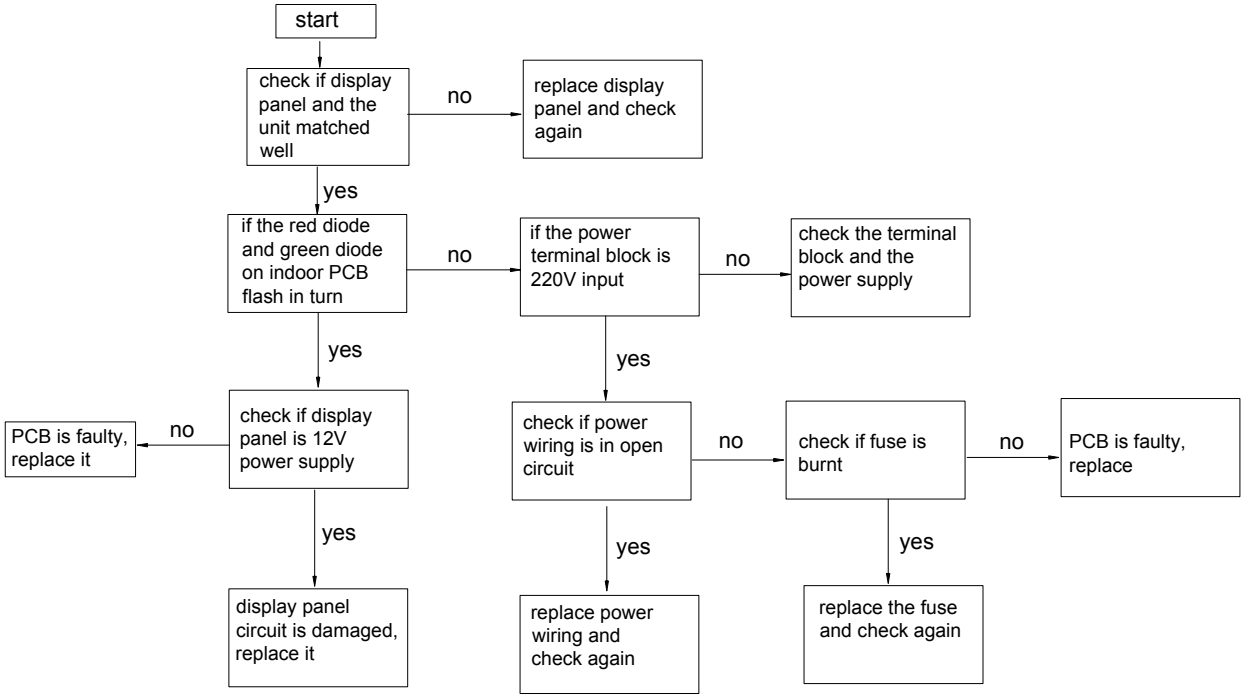
When compressor has run for over 5 minutes, to prevent indoor evaporator freezing (in cooling/dry mode), if indoor mid-coil temp. is below -1 degree for over 5 minutes, indoor EEV will close, and compressor will stop. When indoor mid-coil temp. is over about 10 degree, the unit will be normal.

23. Overload protection in heating mode

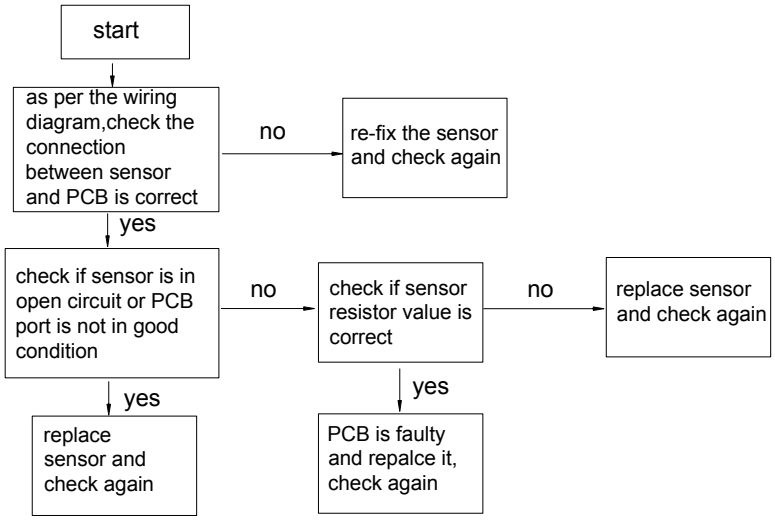
It is valid only in heating mode, if indoor mid-coil temp. is over about 65 degree continuously for 10 seconds, indoor will stop; while when indoor mid-coil temp. is below 52 degree for 3 seconds, indoor will resume.

6. Troubleshooting

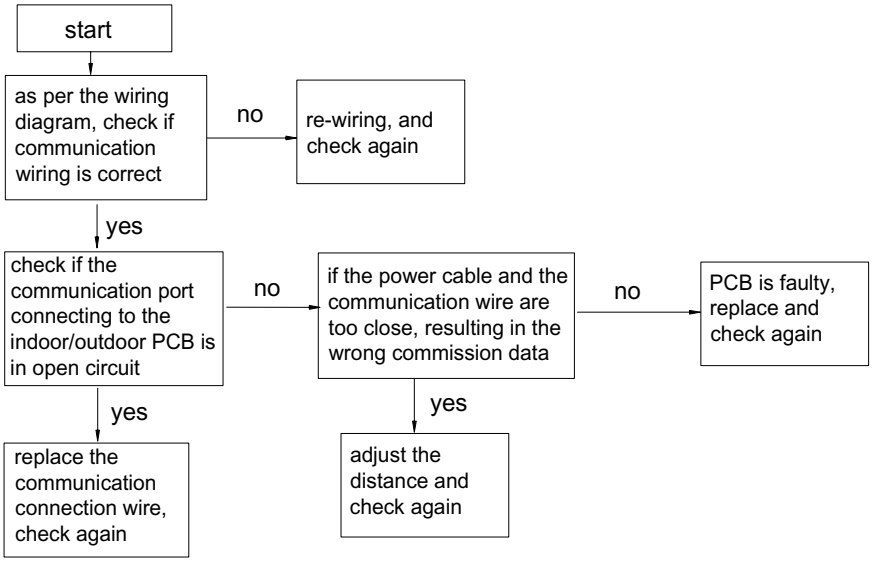
Trouble 1: No display on the operation panel


start
check if display panel and the unit matched well
no
replace display panel and check again
yes
if the red diode and green diode on indoor PCB flash in turn
no
if the power terminal block is 220V input
no
check the terminal block and the power supply
yes
yes
PCB is faulty, replace it
no
check if display panel is 12V power supply
check if power wiring is in open circuit
no
check if fuse is burnt
no
PCB is faulty, replace
yes
yes
yes
display panel circuit is damaged, replace it
replace power wiring and check again
replace the fuse and check again

Trouble 2: Sensor failure


start
as per the wiring diagram,check the connection between sensor and PCB is correct
no
re-fix the sensor and check again
yes
check if sensor is in open circuit or PCB port is not in good condition
no
check if sensor resistor value is correct
no
replace sensor and check again
yes
yes
replace sensor and check again
PCB is faulty and repalce it, check again

Trouble 3: Communication failure between indoor and outdoor


start
as per the wiring diagram, check if communication wiring is correct
no
re-wiring, and check again
yes
check if the communication port connecting to the indoor/outdoor PCB is in open circuit
no
if the power cable and the communication wire are too close, resulting in the wrong commission data
no
PCB is faulty, replace and check again
yes
yes
replace the communication connection wire, check again
adjust the distance and check again

Trouble 4: Indoor PCB EEPROM data is wrong

1.If the failure occurs when being electrified for the first time, that shows EEPROM（8-bit pin) not fixed firmly or damaged.

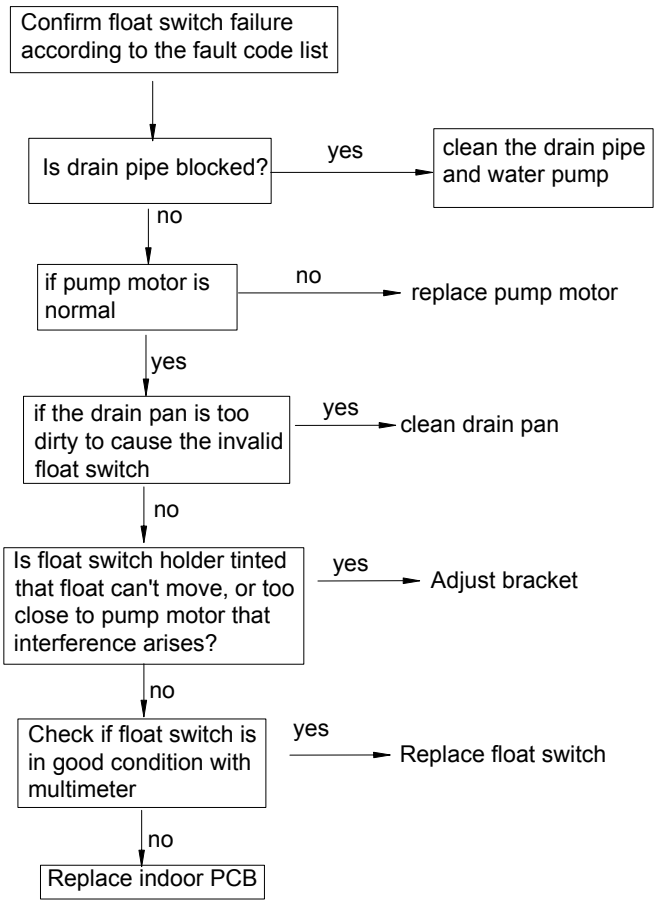
2.If the failure occurs when running, that shows EEPROM is faulty and need to be replaced.

Trouble 5: Indoor repeated unit number

1.Firstly query the unit number: switch off the unit, press SLEEP for about 15 seconds until the buzzer sounds 5 times, on the display panel there will be digit, which is indoor number. By this method,you can check if there is repeated unit number, if yes, please re-set the number as per the unit number setting procedure.

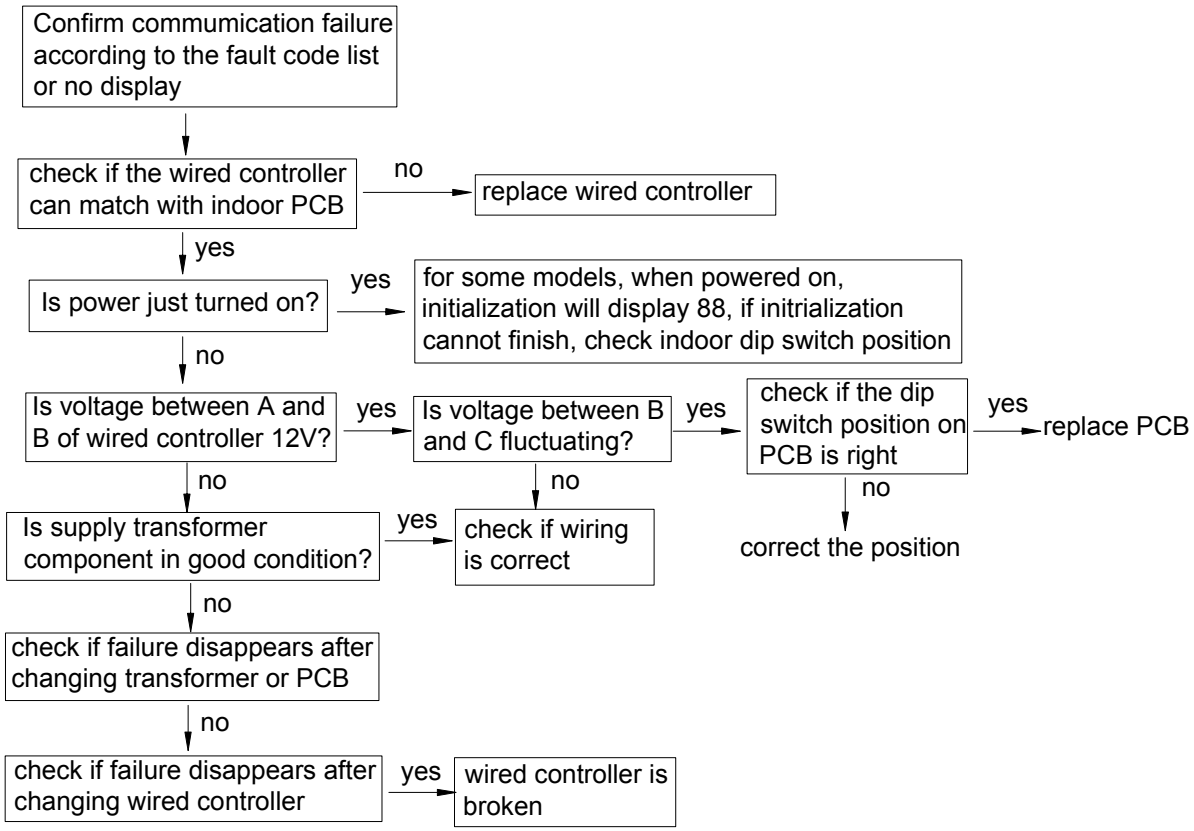
2.Re-set the unit number directly, the unit with outdoor pipe A is No. 1; the unit with outdoor pipe B is No. 2; the unit with pipe C is No.3

6) Fault in drain system


Confirm float switch failure according to the fault code list
Is drain pipe blocked?
yes
clean the drain pipe and water pump
no
if pump motor is normal
no
replace pump motor
yes
if the drain pan is too dirty to cause the invalid float switch
yes
clean drain pan
no
Is float switch holder tinted that float can't move, or too close to pump motor that interference arises?
yes
Adjust bracket
no
Check if float switch is in good condition with multimeter
yes
Replace float switch
no
Replace indoor PCB

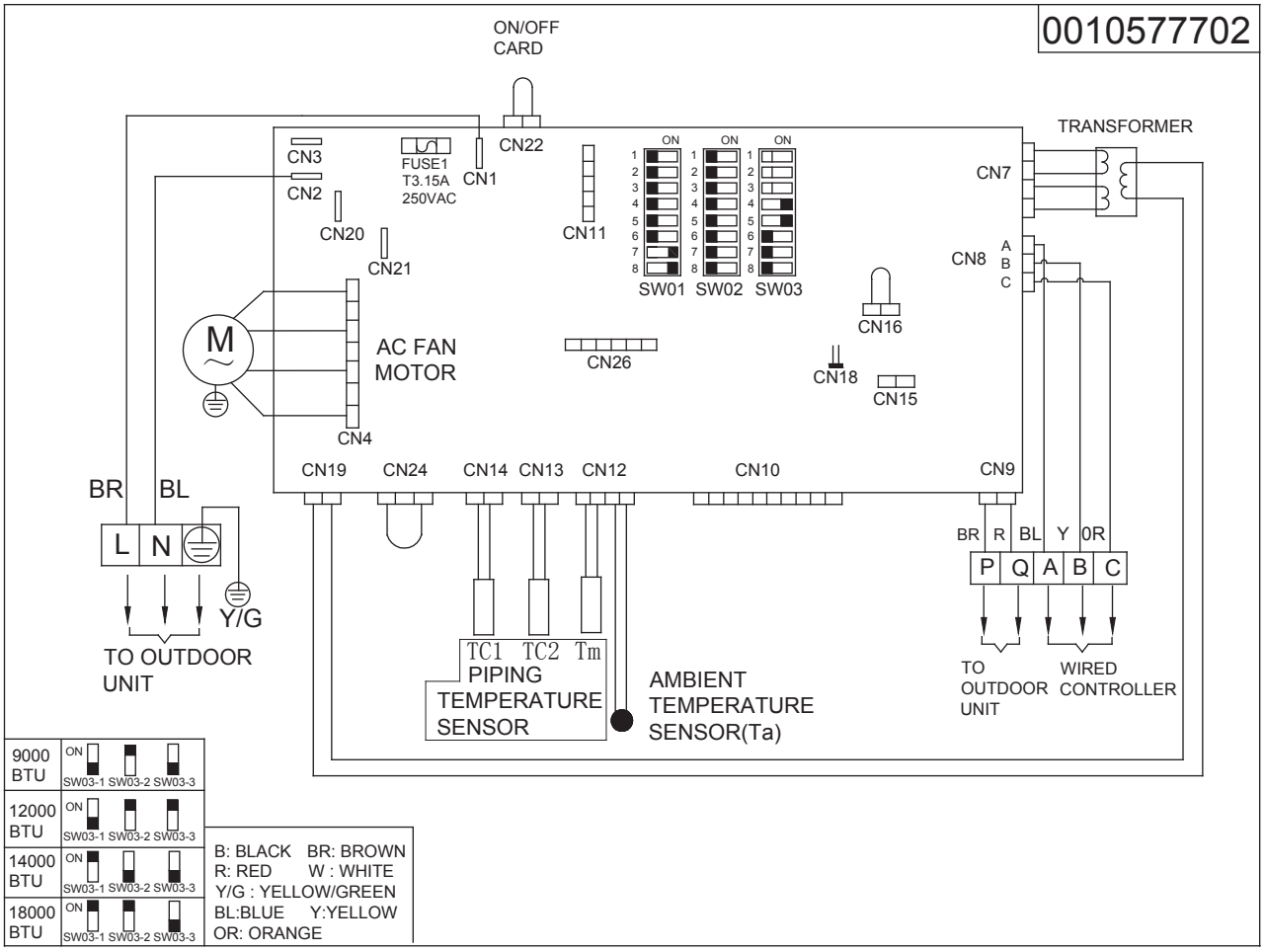
Note: Float switch is close in normal state, when being activated, it is open. Voltage between both ends is 0V when close, approximately 5V when open.

7) Communication failure between wired controller and indoor PCB or no display on wired controller

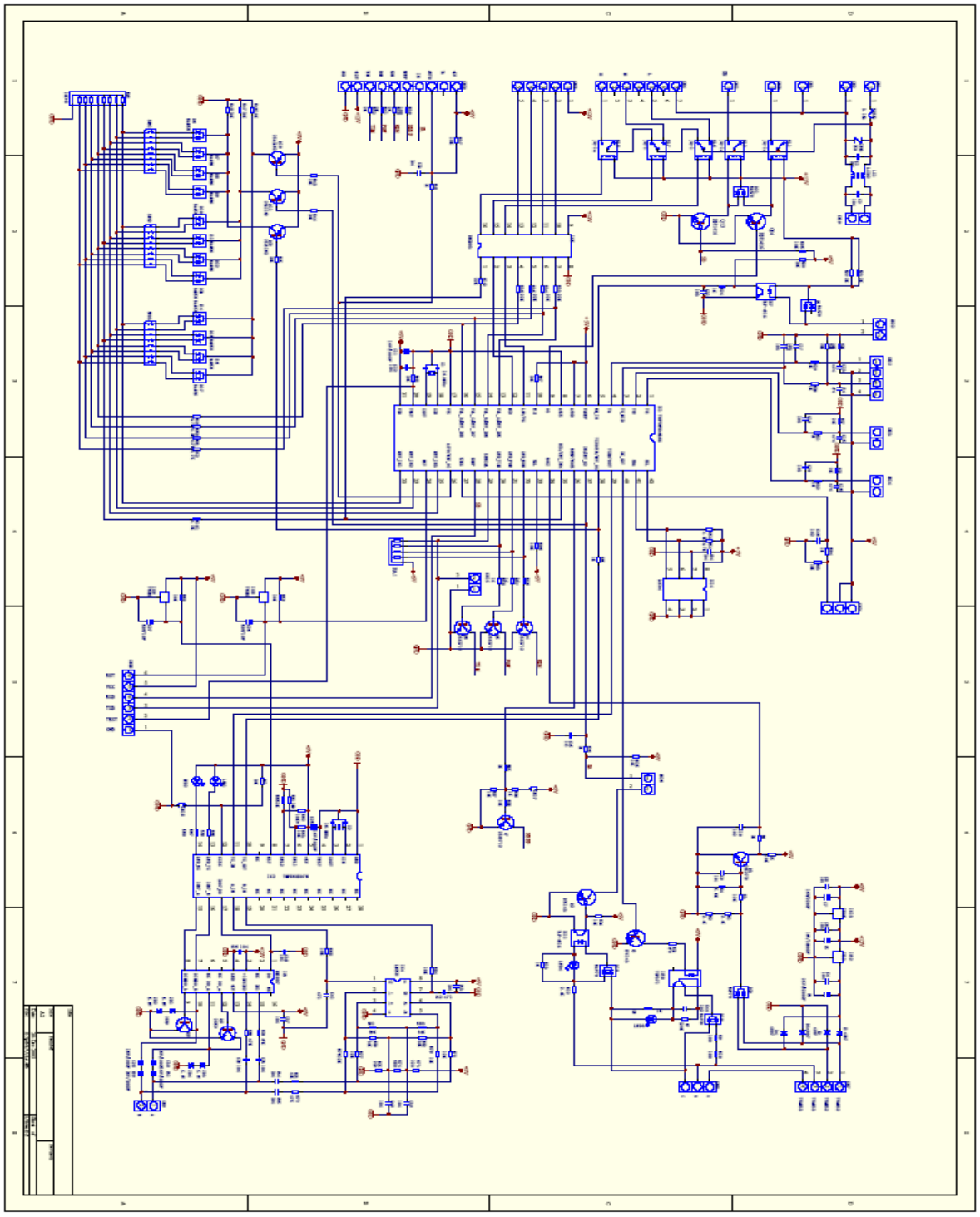

Confirm commumication failure according to the fault code list or no display
check if the wired controller can match with indoor PCB
no
replace wired controller
yes
Is power just turned on?
yes
for some models, when powered on, initialization will display 88, if initrialization cannot finish, check indoor dip switch position
no
Is voltage between A and B of wired controller 12V?
yes
Is voltage between B and C fluctuating?
yes
check if the dip switch position on PCB is right
yes
replace PCB
no
correct the position
no
Is supply transformer component in good condition?
yes
check if wiring is correct
no
check if failure disappears after changing transformer or PCB
no
check if failure disappears after changing wired controller
yes
wired controller is broken

7. Electric data

7.1 Wiring diagram



7.2 Circuit diagram



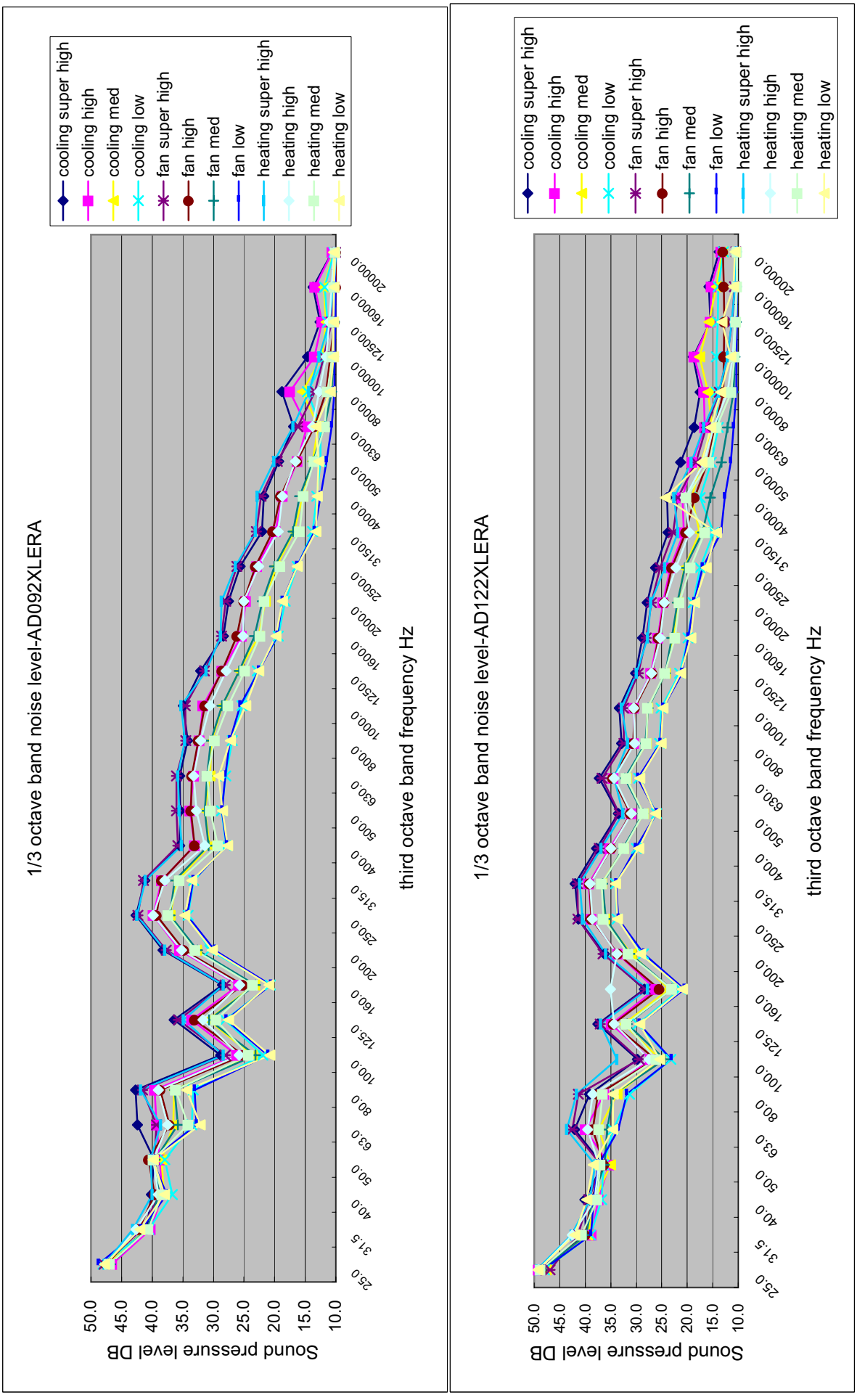
7.3 Sensor part number and their resistor value

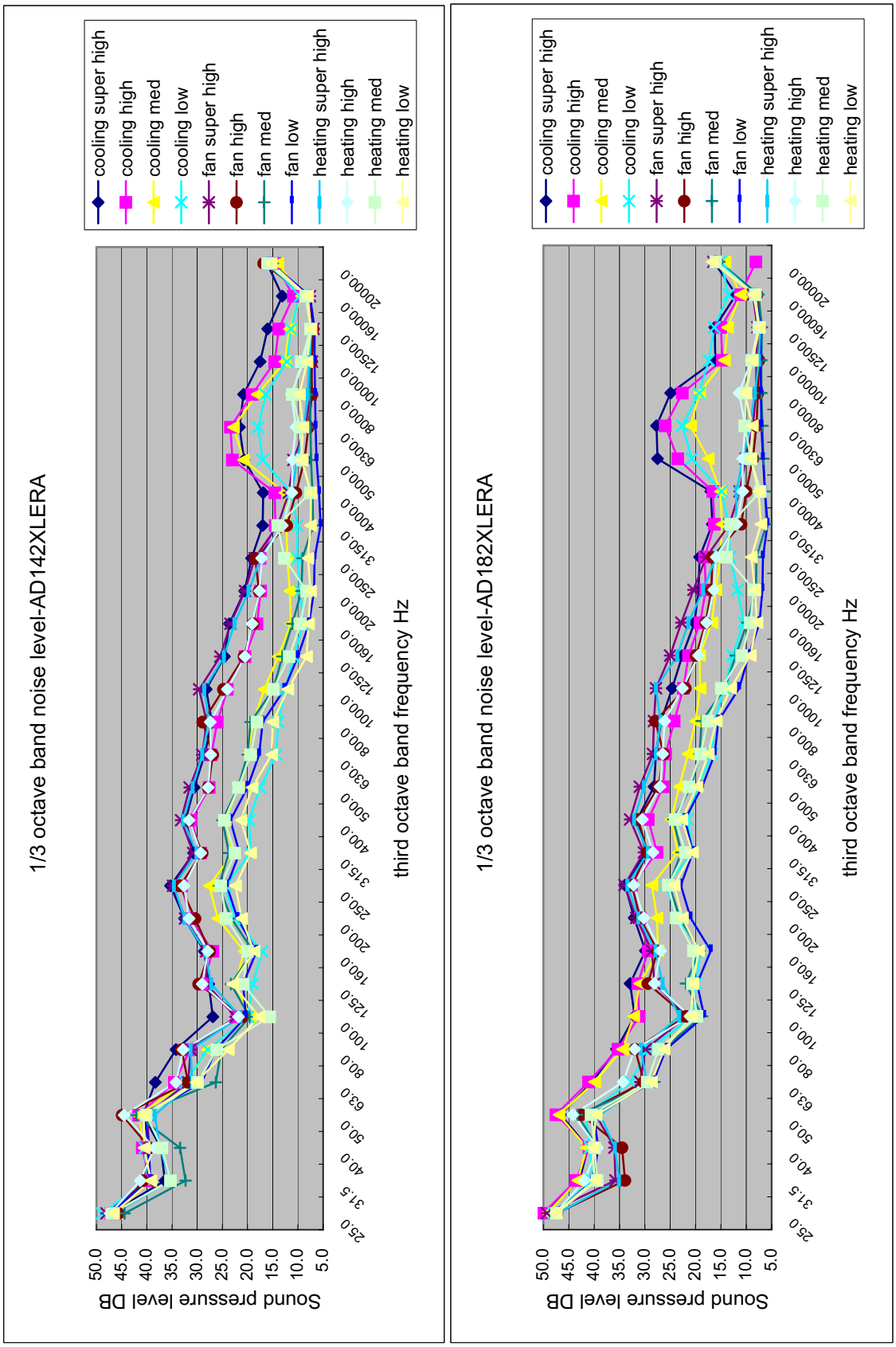
AD092XLERA AD122XLERA AD142XLERA AD182XLERA	E-coil temp. sensor	001A3900055		R25=10KΩ±3% B25/50=3700K±3%
	suction temp. sensor	0010451513	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	coil temp. sensor	001A3900006	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
	ambient temp. sensor	001A3900159	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%

R25=23KΩ±2.5% B25/50=4200K±3%		R25=23KΩ±2.5% B25/50=4200K±3%	
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-20℃	281.34	24℃	24.12
-19℃	263.56	25℃	23
-18℃	247.04	26℃	21.94
-17℃	231.66	27℃	20.94
-16℃	217.35	28℃	19.99
-15℃	204.02	29℃	19.09
-14℃	191.61	30℃	18.23
-13℃	180.04	31℃	17.42
-12℃	169.24	32℃	16.65
-11℃	159.17	33℃	15.92
-10℃	149.77	34℃	15.22
-9℃	140.99	35℃	14.56
-8℃	132.78	36℃	13.93
-7℃	125.11	37℃	13.34
-6℃	117.93	38℃	12.77
-5℃	111.22	39℃	12.23
-4℃	104.93	40℃	11.71
-3℃	99.04	41℃	11.22
-2℃	93.52	42℃	10.76
-1℃	88.35	43℃	10.31
0℃	83.5	44℃	9.89
1℃	78.94	45℃	9.49
2℃	74.67	46℃	9.1
3℃	70.65	47℃	8.74
4℃	66.88	48℃	8.39
5℃	63.33	49℃	8.05
6℃	60	50℃	7.73
7℃	56.86	51℃	7.43
8℃	53.91	52℃	7.14
9℃	51.13	53℃	6.86
10℃	48.51	54℃	6.6
11℃	46.04	55℃	6.34
12℃	43.72	56℃	6.1
13℃	41.52	57℃	5.87
14℃	39.45	58℃	5.65
15℃	37.5	59℃	5.44
16℃	35.66	60℃	5.24
17℃	33.92		
18℃	32.27		
19℃	30.72		
20℃	29.25		
21℃	27.86		
22℃	26.54		
23℃	25.3		

R25=10KΩ±3% B25/50=3700K±3%		R25=10KΩ±3% B25/50=3700K±3%		R25=10KΩ±3% B25/50=3700K±3%	
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-20℃	90.79	24	10.43	68	2.09
-19	85.72	25	10	69	2.03
-18	80.96	26	9.59	70	1.96
-17	76.51	27	9.21	71	1.9
-16	72.33	28	8.84	72	1.85
-15	68.41	29	8.48	73	1.79
-14	64.73	30	8.15	74	1.73
-13	61.27	31	7.83	75	1.68
-12	58.02	32	7.52	76	1.63
-11	54.97	33	7.23	77	1.58
-10	52.1	34	6.95	78	1.54
-9	49.4	35	6.68	79	1.49
-8	46.86	36	5.43	80	1.45
-7	44.46	37	5.6		
-6	42.21	38	5.59		
-5	40.08	39	5.73		
-4	38.08	40	5.52		
-3	36.19	41	5.32		
-2	34.41	42	5.12		
-1	32.73	43	4.93		
0	31.14	44	4.9		
1	29.64	45	4.58		
2	28.22	46	4.42		
3	26.4	47	4.26		
4	25.61	48	4.11		
5	24.41	49	3.97		
6	23.27	50	3.83		
7	22.2	51	3.7		
8	21.18	52	3.57		
9	20.21	53	3.45		
10	19.3	54	3.33		
11	18.43	55	3.22		
12	17.61	56	3.11		
13	16.83	57	3.11		
14	16.09	58	2.9		
15	15.38	59	2.81		
16	14.71	60	2.72		
17	14.08	61	2.63		
18	13.48	62	2.54		
19	12.9	63	2.49		
20	12.36	64	2.38		
21	11.84	65	2.3		
22	11.34	66	2.23		
23	10.87	67	2.16		

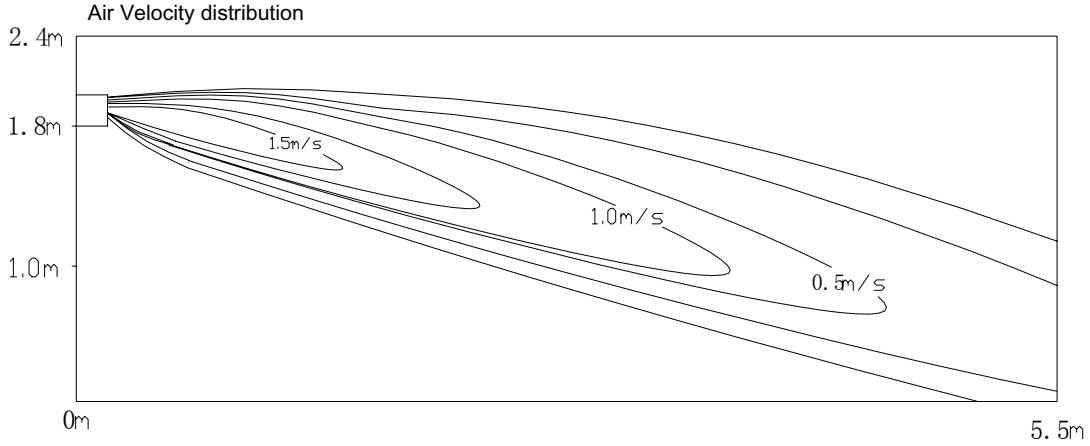
8. Noise level



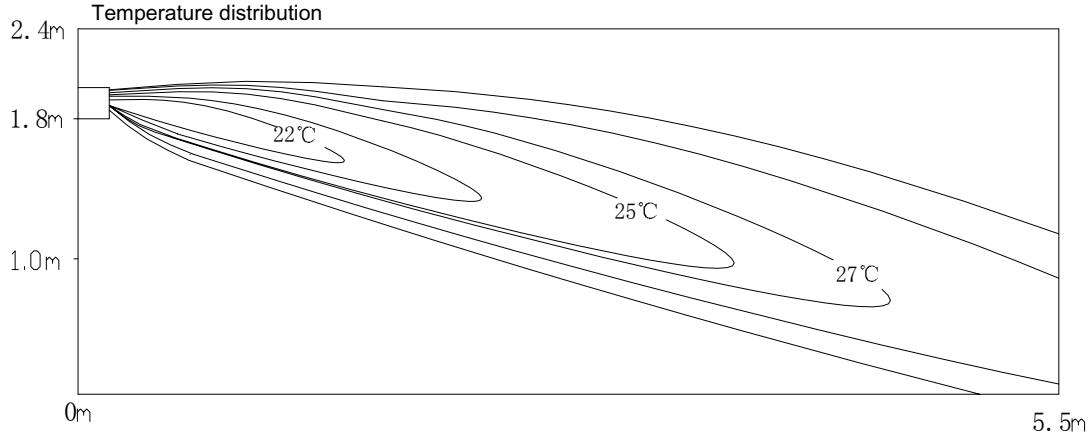

1/3 octave band noise level-AD142XLERA
cooling super high
cooling high
cooling med
cooling low
fan super high
fan high
fan med
fan low
heating super high
heating high
heating med
heating low
Sound pressure level DB
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
1/3 octave band noise level-AD182XLERA
cooling super high
cooling high
cooling med
cooling low
fan super high
fan high
fan med
fan low
heating super high
heating high
heating med
heating low
Sound pressure level DB
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz

9. Air velocity and distribution

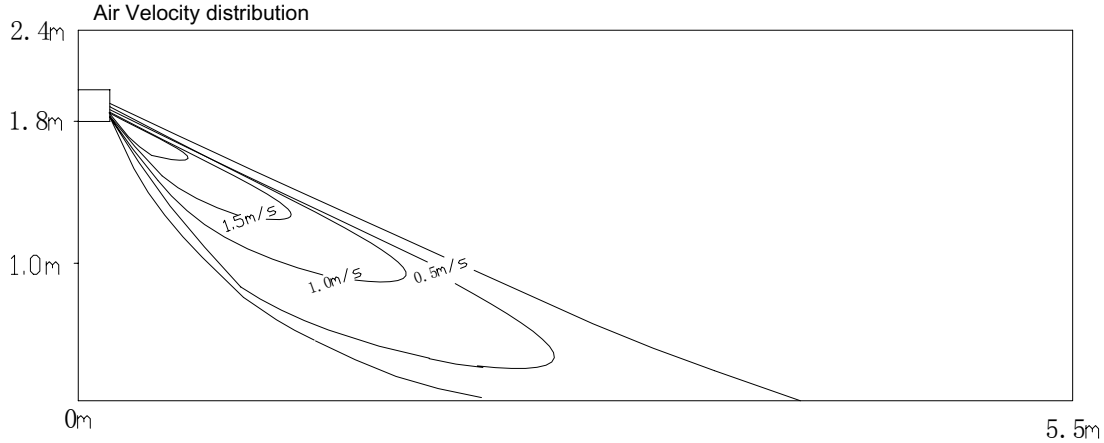
2cooling
air discharge angle 5°
Air Velocity distribution



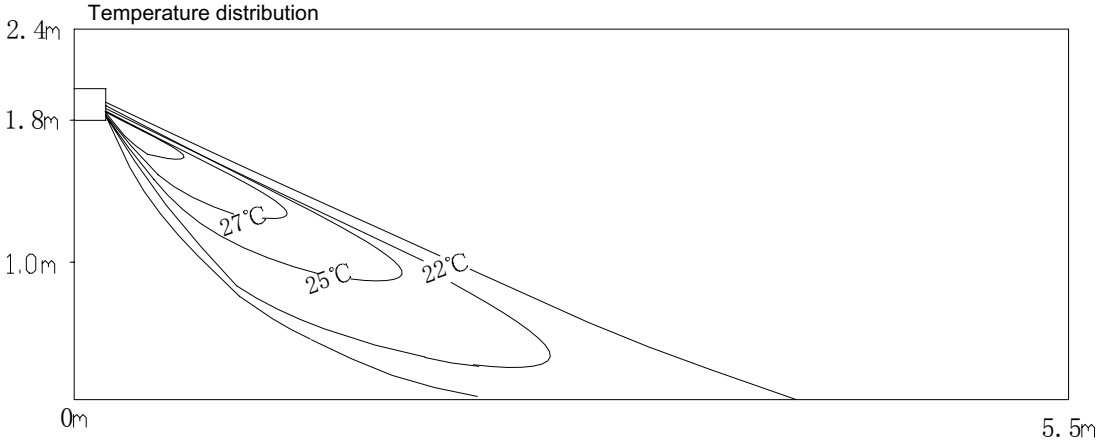
2cooling
air discharge angle 5°
Temperature distribution



2heating
air discharge angle 45°
Air Velocity distribution



2heating
air discharge angle 45°
Temperature distribution



Sincere Forever

Haier Group

Haier Industrial Park, No.1, Haier Road

266101, Qingdao, China

http://www.haier.com